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UNITED STATES DEPARTMENT OF COMMERCE
Jesse H. Jones, Secretary
WEATHER BUREAU - - - F. W. Reichelderfer, Chief

MONTHLY WEATHER REVIEW

OCTOBER 1944

CONTENTS

	Page
Meteorological and Climatological Data:	
Aerological Observations	205
River Stages, and Floods	216
Climatological Data	221
Solar Radiation and Sunspot Data:	
Solar Radiation Observations	217
Faculae, Areas, and Counts of Sunspots	219
Provisional Relative Sunspot Numbers for August 1944	220
Charts I-XI (Chart VII, Snowfall, Omitted Until November)	

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MONTHLY WEATHER REVIEW

Editor, EDGAR W. WOOLARD

VOL. 72, No. 10
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OCTOBER 1944

CLOSED DECEMBER 5, 1944
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NOTICE

A REPORT ON THE HURRICANE OF OCTOBER 13–21, 1944, WILL APPEAR IN THE NOVEMBER ISSUE OF THE MONTHLY WEATHER REVIEW

METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1944

[Climate and Crop Weather Division, W. A. Mattice, Acting in charge]

AEROLOGICAL OBSERVATIONS

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during October 1944*

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL

Altitude (meters) m. s. l.	Albany, N. Y. (86 m.)				Albuquerque, N. Mex. (1,620 m.)				Apalachicola, Fla. (5 m.)				Atlanta, Ga. (300 m.)				Big Spring, Tex. (774 m.)				Bismarck, N. Dak. (505 m.)				Boise, Idaho (869 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	1,008	7.5	81	26	842	14.4	51	31	1,018	19.3	76	31	985	15.2	67	31	932	18.5	56	31	960	8.2	63	31	918	13.5	47
500	31	958	7.9	66					31	961	19.3	56	31	962	16.8	55												
1,000	31	902	5.4	65					31	907	15.9	58	31	908	13.9	56	31	908	18.4	52	31	905	11.6	48	31	904	16.4	41
1,500	31	850	3.1	62					31	855	13.4	46	31	855	11.2	51	31	856	15.1	53	31	852	9.4	44	31	853	15.1	35
2,000	31	798	1.3	60	26	805	13.2	48	31	805	11.4	40	31	805	8.9	45	31	807	11.7	52	31	802	6.9	43	31	803	11.4	37
2,500	31	749	−0.6	54	26	758	9.8	51	31	758	9.2	35	30	757	6.9	26	31	760	8.7	46	31	754	4.4	39	31	756	7.5	41
3,000	31	704	−3.3	49	26	714	5.7	57	31	714	6.4	34	30	712	4.3	35	31	715	5.4	42	31	709	2.0	40	31	712	3.6	43
4,000	31	620	−8.1	40	26	631	−1.6	57	31	631	0.7	29	28	630	−1.5	31	30	632	−0.7	27	31	626	−3.8	39	31	628	−3.4	48
5,000	30	544	−14.1	39	26	556	−8.4	50	31	556	−4.9	----	27	555	−7.4	----	30	556	−7.3	26	31	550	−10.1	40	31	553	−10.1	47
6,000	30	476	−21.1	40	26	488	−15.0	42	31	489	−11.3	----	25	487	−14.1	----	30	489	−13.7	25	31	483	−17.1	39	31	485	−16.9	39
7,000	30	415	−28.1	38	25	427	−22.2	36	31	429	−18.1	----	23	426	−20.7	----	30	428	−21.1	30	30	422	−24.7	43	31	424	−24.5	38
8,000	30	360	−35.2	----	23	371	−29.9	----	31	374	−25.1	----	21	372	−27.7	----	30	373	−28.6	32	29	366	−32.5	47	31	368	−32.6	----
9,000	30	311	−42.5	----	22	321	−37.8	----	31	325	−32.2	----	19	323	−35.1	----	30	323	−36.2	----	29	317	−40.1	----	30	318	−40.6	----
10,000	30	268	−48.5	----	22	278	−45.5	----	30	282	−39.6	----	14	280	−41.5	----	30	279	−43.9	----	28	273	−48.0	----	30	275	−47.9	----
11,000	28	230	−53.1	----	21	238	−52.4	----	30	243	−46.3	----	12	242	−48.0	----	29	240	−50.8	----	25	235	−55.0	----	28	236	−52.8	----
12,000	25	197	−56.2	----	19	204	−56.7	----	28	208	−52.2	----	9	208	−53.1	----	26	206	−56.2	----	21	200	−59.5	----	26	202	−57.2	----
13,000	20	168	−58.0	----	15	174	−58.4	----	20	178	−58.1	----	7	178	−59.9	----	20	176	−60.2	----	18	170	−61.2	----	15	172	−58.4	----
14,000	15	144	−59.9	----	9	149	−62.1	----	7	153	−63.0	----	5	153	−64.0	----	6	150	−63.7	----	7	144	−61.9	----				
15,000	8	124	−61.8	----																								

Altitude (meters) m. s. l.	Brownsville, Tex. (6 m.)				Buffalo, N. Y. (221 m.)				Caribou, Maine (193 m.)				Charleston, S. C. (14 m.)				Denver, Colo. (1616 m.)				Dodge City, Kans. (787 m.)				El Paso, Tex. (1195 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	1,018	21.2	84	31	993	8.7	76	30	992	4.1	81	30	1,016	15.8	84	31	843	11.0	44	31	930	12.4	71	31	885	18.7	45
500	31	962	20.7	69	31	960	9.0	70	30	955	4.5	71	30	960	17.3	65												
1,000	31	908	17.0	67	31	904	6.8	63	30	898	1.7	71	30	905	14.2	63					31	907	15.0	58				
1,500	31	856	14.2	55	31	850	4.0	58	30	844	−0.7	67	30	853	11.2	60					31	855	13.0	54	31	855	19.0	41
2,000	31	806	11.6	44	31	799	2.0	58	30	792	−2.6	61	30	803	9.0	49	31	805	12.7	38	31	805	10.5	51	31	806	15.5	42
2,500	31	759	9.1	39	31	750	−0.3	55	30	744	−4.4	60	30	755	7.1	37	31	758	9.2	39	31	758	7.4	49	31	759	11.4	47
3,000	31	715	6.4	35	31	705	−2.7	53	30	698	−6.1	58	30	711	4.8	28	31	713	5.4	45	31	713	4.6	41	31	715	7.4	50
4,000	30	632	1.1	28	31	621	−7.8	49	30	614	−10.7	45	30	628	−1.3	26	31	630	−2.4	58	31	630	−2.2	40	31	632	0.5	51
5,000	30	558	−4.9	27	31	545	−13.5	42	30	538	−16.6	45	29	553	−7.0	----	31	555	−9.8	60	31	554	−8.8	33	31	557	−6.6	45
6,000	30	490	−10.8	26	30	477	−20.6	41	30	470	−23.4	46	29	485	−13.9	----	31	487	−16.7	47	31	486	−15.6	32	31	489	−13.1	40
7,000	29	430	−17.4	----	30	416	−27.8	44	30	409	−30.1	41	28	425	−20.6	----	31	426	−24.1	40	31	425	−23.2	33	31	429	−20.2	39
8,000	29	375	−24.9	----	30	361	−34.9	----	30	355	−37.1	----	25	370	−27.5	----	31	370	−31.8	----	31	370	−30.9	36	31	374	−27.5	39
9,000	29	326	−32.5	----	30	312	−41.4	----	27	307	−43.2	----	24	321	−34.8	----	30	320	−39.5	----	30	320	−38.9	----	30	324	−35.1	----
10,000	29	283	−39.8	----	30	269	−47.0	----	25	264	−48.4	----	22	278	−41.9	----	28	276	−46.9	----	30	277	−46.4	----	30	280	−42.9	----
11,000	29	244	−47.1	----	28	231	−51.8	----	22	226	−51.0	----	21	240	−48.7	----	28	237	−53.7	----	29	238	−52.8	----	30	241	−49.8	----
12,000	26	209	−53.7	----	25	198	−55.5	----	17	196	−53.9	----	20	206	−55.5	----	21	203	−57.5	----	26	203	−57.2	----	27	207	−55.4	----
13,000	23	179	−59.9	----	19	169	−56.4	----	14	168	−56.0	----	16	176	−59.5	----	11	173	−60.1	----	18	174	−59.9	----	22	176	−59.7	----
14,000	18	152	−66.1	----	13	144	−58.1	----	11	143	−57.0	----	12	151	−63.0	----	5	147	−62.1	----	10	148	−61.8	----	10	151	−63.9	----
15,000	7	129	−71.1	----	9	123	−60.3	----	8	122	−57.8	----	6	128	−68.2	----									6	129	−67.4	----

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during October 1944*—Continued

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL—Continued

Altitude (meters) m. s. l.	Ely, Nev. (1908 m.)				Glasgow, Mont. (648 m.)				Grand Junction, Colo. (1416 m.)				Great Falls, Mont. (1128 m.)				Greensboro, N. C. (273 m.)				Hatteras, N. C. (3 m.)				Huntington, W. Va. (172 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	813	7.7	49	31	943	10.4	56	30	863	14.0	50	31	890	13.8	38	26	986	11.7	84	31	1,018	17.5	82	31	1,001	10.2	87
500																	26	960	14.3	68	31	960	15.7	65	31	962	13.4	67
1,000					31	904	14.0	43									26	905	11.6	62	31	906	12.6	63	31	907	10.6	65
1,500					31	852	11.3	42	30	854	15.3	41	31	852	14.1	35	26	852	8.6	62	31	853	9.9	61	31	854	8.1	60
2,000	31	804	9.8	45	31	802	8.4	42	30	805	13.1	37	31	802	10.6	38	26	802	6.0	57	31	803	7.7	53	31	803	5.4	61
2,500	31	757	9.1	40	31	755	5.4	43	30	758	9.1	42	31	755	6.7	41	26	754	3.5	48	31	755	5.8	45	31	755	2.9	57
3,000	31	713	5.2	43	31	710	2.1	44	30	713	5.0	47	31	710	3.1	43	26	709	0.9	42	31	710	3.2	41	31	710	0.6	50
4,000	31	630	−2.6	48	31	626	−3.8	43	30	630	−3.0	53	31	627	−3.3	42	25	626	−4.3	27	31	627	−2.2	29	31	626	−4.7	45
5,000	31	554	−9.3	43	31	551	−10.0	39	30	554	−10.3	48	31	552	−9.9	42	25	550	−9.8	----	30	552	−8.0	----	31	551	−10.5	38
6,000	31	486	−16.1	41	29	483	−17.0	39	29	486	−17.0	37	31	484	−17.1	40	25	483	−16.7	----	30	485	−14.7	----	31	483	−17.4	37
7,000	31	425	−23.7	35	29	422	−24.8	41	29	424	−24.5	36	30	423	−24.5	43	25	422	−24.1	----	29	425	−21.4	----	29	422	−24.5	----
8,000	31	369	−31.6	----	29	367	−32.5	43	29	369	−32.3	----	30	367	−32.4	39	25	366	−31.2	----	28	371	−28.0	----	29	367	−31.4	----
9,000	30	320	−39.7	----	29	317	−40.0	----	28	319	−40.4	----	29	317	−40.2	----	25	317	−38.4	----	27	322	−34.9	----	29	318	−38.2	----
10,000	29	276	−46.7	----	29	274	−47.6	----	26	275	−48.1	----	29	274	−48.0	----	25	274	−45.6	----	27	278	−41.7	----	29	274	−44.5	----
11,000	28	237	−52.8	----	27	235	−54.5	----	23	237	−54.5	----	27	235	−54.7	----	24	236	−51.4	----	25	239	−49.0	----	28	236	−49.8	----
12,000	26	202	−57.0	----	24	201	−59.2	----	15	202	−58.6	----	25	201	−59.3	----	22	202	−56.4	----	23	205	−55.0	----	27	202	−53.9	----
13,000	20	173	−60.6	----	21	171	−61.3	----	13	172	−61.3	----	21	171	−62.0	----	21	172	−60.5	----	16	175	−60.0	----	19	172	−57.3	----
14,000	10	147	−61.9	----	9	146	−63.1	----	5	147	−62.9	----	13	145	−62.9	----	13	147	−63.6	----	12	150	−64.4	----	12	146	−59.8	----
15,000	5	125	−65.3	----	5	123	−61.2	----	----	----	----	----	7	123	−61.8	----	8	125	−66.1	----	----	----	----	----	7	125	−62.8	----

Altitude (meters) m. s. l.	Int'l Falls, Minn. (343 m.)				Jackson, Miss. (97 m.)				Joliet, Ill. (178 m.)				Lake Charles, La. (5 m.)				Lakehurst, N. J.[1] (39 m.)				Little Rock, Ark. (79 m.)				Louisville, Ky. (165 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	29	978	6.1	74	31	1,009	16.3	66	31	1,000	8.7	80	31	1,020	17.9	79	24	1,016	10.8	79	31	1,011	16.3	68	31	1,001	12.1	74
500	29	959	7.5	69	31	962	18.5	52	31	961	11.3	67	31	963	19.7	57	24	962	12.3	60	31	963	18.8	49	31	962	14.6	58
1,000	29	903	5.9	62	31	908	15.0	54	31	906	9.1	61	31	909	16.2	58	24	906	9.8	53	31	908	15.3	51	31	907	11.8	54
1,500	29	850	4.3	51	31	856	12.0	46	31	853	7.3	53	31	857	13.4	48	24	853	7.3	47	31	856	12.3	48	31	854	9.3	47
2,000	29	798	2.3	45	31	806	9.6	36	31	802	5.0	52	31	807	11.0	40	24	802	5.7	39	31	806	9.5	42	31	804	6.5	45
2,500	29	750	0.2	42	31	758	6.8	36	31	754	2.8	50	31	760	8.2	36	24	754	3.4	36	31	758	6.6	44	31	756	4.0	43
3,000	29	705	−2.3	44	31	713	4.0	34	31	709	0.2	50	31	715	5.9	32	24	709	0.9	31	31	714	3.8	38	31	711	1.6	32
4,000	29	621	−7.5	40	31	630	−2.2	29	30	625	−5.0	44	31	632	0.2	26	23	626	−4.4	----	31	630	−2.4	32	30	627	−3.9	32
5,000	29	545	−13.8	40	31	554	−8.3	27	30	550	−11.1	44	31	558	−5.2	24	23	550	−10.0	----	31	555	−8.2	28	30	552	−10.0	32
6,000	29	477	−20.7	38	31	487	−14.5	----	30	482	−17.7	33	30	490	−11.7	24	22	482	−17.1	----	31	487	−14.9	----	30	484	−17.0	29
7,000	29	416	−28.1	40	31	426	−21.6	----	30	421	−25.2	37	29	429	−18.9	----	21	422	−24.3	----	31	426	−22.2	----	30	423	−24.5	----
8,000	29	361	−35.0	----	31	371	−28.8	----	30	365	−33.0	----	29	374	−26.5	----	18	368	−30.4	----	31	371	−29.7	----	29	368	−32.0	----
9,000	29	312	−42.1	----	30	322	−35.9	----	30	316	−40.5	----	28	325	−34.2	----	17	319	−37.5	----	31	321	−37.2	----	29	318	−39.2	----
10,000	27	269	−48.8	----	30	278	−42.7	----	30	273	−47.2	----	28	281	−41.3	----	15	275	−43.5	----	30	278	−44.7	----	29	274	−45.9	----
11,000	24	231	−54.2	----	30	239	−49.0	----	30	234	−52.9	----	28	242	−48.0	----	14	237	−48.7	----	30	238	−50.8	----	29	236	−51.4	----
12,000	15	198	−56.1	----	30	205	−55.0	----	27	200	−56.6	----	28	208	−54.2	----	11	204	−55.0	----	29	204	−55.7	----	28	202	−55.5	----
13,000	14	169	−58.5	----	24	175	−60.3	----	25	171	−59.6	----	24	178	−59.7	----	8	175	−59.4	----	24	174	−60.0	----	20	172	−58.4	----
14,000	8	144	−59.3	----	20	148	−64.0	----	15	146	−61.7	----	17	152	−64.6	----	7	149	−62.0	----	13	149	−62.4	----	11	149	−62.8	----
15,000					12	126	−66.5	----	7	124	−62.3	----					5	127	−62.9	----	6	128	−64.2	----				
16,000					5	107	−69.7	----																				

Altitude (meters) m. s. l.	Mazatlan, Mexico[2] (80 m.)				Medford, Oreg. (409 m.)				Merida, Mexico (27 m.)				Miami, Fla. (4 m.)				Nashville, Tenn. (180 m.)				Norfolk, Va.[1] (4 m.)				Oakland, Calif. (2 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	----	----	----	----	30	969	15.0	69	25	1,014	24.3	84	31	1,015	22.2	84	31	1,000	13.9	73	22	1,018	17.9	77	31	1,016	16.0	80
500	----	----	----	----	30	959	16.1	63	25	960	21.1	82	31	959	20.8	79	31	962	15.5	57	22	960	15.7	69	31	958	16.7	58
1,000	----	----	----	----	30	904	15.4	52	25	906	17.6	82	31	905	17.5	80	31	908	12.5	53	22	906	13.4	64	31	904	14.8	50
1,500	----	----	----	----	30	852	12.2	52	25	855	14.3	77	31	854	14.5	72	31	855	10.1	45	22	854	10.8	54	31	852	12.2	46
2,000	----	----	----	----	30	803	9.0	53	25	805	11.8	61	31	804	11.9	64	31	804	7.7	45	22	803	8.6	45	31	802	9.3	41
2,500	----	----	----	----	30	755	5.8	50	25	758	9.8	50	31	757	9.6	53	31	756	5.1	39	22	756	5.7	47	31	754	6.6	34
3,000	----	----	----	----	30	710	2.6	49	25	714	7.6	47	31	713	7.5	46	31	712	2.5	37	22	711	2.9	47	31	710	3.7	30
4,000	----	----	----	----	30	627	−3.5	41	25	632	3.5	34	31	631	2.6	38	31	628	−3.1	33	22	628	−2.1	----	31	626	−2.4	27
5,000	----	----	----	----	30	552	−9.8	40	25	558	−2.1	----	31	557	−3.0	39	30	553	−9.1	30	22	553	−7.7	----	31	551	−9.1	25
6,000	----	----	----	----	30	484	−16.5	37	25	491	−8.2	----	31	490	−9.0	----	29	485	−15.8	----	21	486	−14.4	----	31	484	−16.0	29
7,000	----	----	----	----	30	423	−24.0	38	25	431	−15.1	----	31	430	−15.4	----	28	424	−23.6	----	20	425	−21.1	----	31	423	−23.5	----
8,000	----	----	----	----	30	368	−32.2	----	24	377	−22.2	----	31	376	−22.1	----	28	369	−31.1	----	13	369	−29.1	----	31	368	−31.0	----
9,000	----	----	----	----	29	318	−40.4	----	24	328	−29.3	----	31	327	−29.3	----	28	319	−38.4	----	13	320	−36.1	----	31	319	−38.2	----
10,000	----	----	----	----	27	274	−47.9	----	24	285	−36.8	----	30	284	−36.7	----	27	276	−44.9	----	13	277	−42.4	----	31	275	−45.5	----
11,000	----	----	----	----	27	236	−53.8	----	24	246	−44.8	----	30	245	−44.2	----	25	237	−50.6	----	13	238	−48.3	----	30	236	−51.7	----
12,000	----	----	----	----	27	201	−57.4	----	24	211	−53.0	----	28	211	−51.5	----	22	204	−55.4	----	7	205	−53.9	----	28	202	−56.4	----
13,000	----	----	----	----	26	172	−59.8	----	24	180	−61.0	----	25	181	−58.8	----	16	175	−59.8	----	6	176	−59.0	----	26	172	−59.4	----
14,000	----	----	----	----	17	146	−59.9	----	22	153	−68.1	----	17	154	−65.3	----	10	149	−62.8	----	5	149	−63.6	----	18	147	−61.7	----
15,000	----	----	----	----	14	124	−61.0	----	12	129	−74.0	----	----	----	----	----	----	----	----	----	----	----	----	----	11	125	−62.8	----
16,000	----	----	----	----	6	106	−59.8	----	5	109	−78.1	----	----	----	----	----	----	----	----	----	----	----	----	----	5	106	−61.4	----

See footnotes at end of table.

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during October 1944*—Continued

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL—Continued

Altitude (meters) m. s. l.	Ogden, Utah (1355 m.)				Oklahoma City, Okla. (391 m.)				Omaha, Nebr. (301 m.)				Pensacola, Fla.[1] (24 m.)				Phoenix, Ariz. (339 m.)				Pittsburgh, Pa. (392 m.)				Portland, Maine (20 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	868	12.4	53	30	975	16.0	73	31	984	13.2	68	20	1,018	20.8	68	31	974	21.8	46	31	974	10.7	71	31	1,014	7.4	81
500					30	962	18.2	62	31	962	14.5	58	20	963	19.0	52	31	956	20.0	28	31	961	11.0	68	31	957	8.5	62
1,000					30	908	16.5	56	31	907	12.4	54	20	909	15.9	52	31	904	23.7	23	31	905	9.0	66	31	901	6.2	54
1,500	31	853	15.3	40	30	856	13.4	57	31	854	10.2	53	20	857	12.7	52	31	853	19.8	29	31	852	6.7	62	31	848	3.9	51
2,000	31	804	12.6	36	29	806	10.6	49	31	804	8.1	48	20	806	9.9	40	31	804	15.7	34	31	801	4.0	59	31	796	2.2	48
2,500	31	757	8.7	41	29	759	7.6	42	31	756	5.4	45	20	759	7.5	30	31	758	11.4	39	31	753	1.9	53	31	748	0.4	46
3,000	31	712	4.7	43	29	714	4.5	37	31	711	2.5	44	20	714	4.8	26	31	713	7.4	41	31	708	−0.6	50	31	703	−2.1	40
4,000	31	629	−3.0	45	29	631	−1.7	33	31	628	−3.7	39	20	631	−1.8	27	31	631	0.1	42	31	624	−5.5	43	31	619	−7.5	47
5,000	31	554	−10.0	44	29	555	−8.0	34	31	552	−10.2	32	20	556	−8.1	24	30	556	−6.6	36	30	549	−11.1	39	30	544	−13.4	48
6,000	31	486	−17.1	42	29	487	−14.7	31	31	484	−16.8	28	20	488	−15.2	26	30	489	−13.3	32	29	481	−18.1	35	30	477	−19.6	43
7,000	31	424	−24.6	36	29	426	−22.1	35	31	423	−24.3	33	20	427	−22.3	----	30	428	−20.4	40	27	420	−25.7	----	30	416	−26.6	46
8,000	31	368	−32.6	41	29	371	−29.8	40	30	368	−31.9	----	17	371	−29.2	----	28	373	−28.2	41	26	364	−33.4	----	29	360	−34.5	----
9,000	31	318	−40.5	----	29	321	−37.4	----	30	318	−39.4	----	17	322	−36.1	----	28	323	−35.9	47	26	315	−40.1	----	28	312	−41.6	----
10,000	31	275	−47.7	----	29	278	−45.2	----	30	275	−46.7	----	17	278	−43.0	----	28	280	−43.4	----	26	272	−46.0	----	26	268	−48.5	----
11,000	31	236	−53.1	----	28	239	−51.7	----	26	236	−52.2	----	17	240	−49.8	----	26	240	−50.3	----	25	234	−50.7	----	24	230	−52.7	----
12,000	31	202	−57.4	----	26	204	−56.6	----	24	202	−57.0	----	16	205	−55.8	----	26	206	−55.5	----	22	200	−54.8	----	23	197	−54.5	----
13,000	27	172	−59.4	----	22	174	−60.4	----	15	172	−59.7	----	14	176	−61.4	----	22	176	−59.4	----	15	172	−57.9	----	19	168	−57.4	----
14,000	25	146	−61.3	----	13	149	−63.3	----	7	147	−60.7	----	10	150	−66.4	----	15	150	−62.0	----	9	146	−58.4	----	12	144	−58.4	----
15,000	17	124	−62.9	----													6	128	−64.4	----	5	124	−58.3	----	6	123	−60.9	----
16,000	7	106	−63.8	----																								

Altitude (meters) m. s. l.	Rapid City, S. Dak. (981 m.)				St. Louis, Mo. (171 m.)				St. Paul, Minn. (225 m.)				San Antonio, Tex. (240 m.)				San Diego, Calif.[1] (19 m.)				San Juan, P. R. (15 m.)				Santa Maria, Calif. (71 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	909	9.2	59	31	1,001	13.2	69	31	993	9.8	68	31	992	18.9	66	30	1,014	17.0	86	31	1,010	26.0	84	31	1,008	13.9	90
500					31	963	14.7	54	31	961	10.9	58	31	963	21.1	56	30	958	16.2	70	31	956	22.9	83	31	959	16.3	69
1,000	31	906	9.7	57	31	908	12.1	50	31	905	8.6	58	31	909	17.5	59	30	903	17.3	40	31	903	19.6	82	31	904	16.4	47
1,500	31	854	11.2	47	31	855	9.7	51	31	852	6.8	53	31	857	13.7	61	30	852	15.4	34	31	852	16.6	79	31	852	14.0	39
2,000	31	804	8.2	51	31	804	7.1	46	31	801	4.6	50	31	807	11.3	52	30	802	12.4	33	31	803	14.1	73	31	803	11.4	30
2,500	31	756	5.6	47	31	757	4.6	42	31	753	2.5	46	31	760	8.6	42	30	756	9.4	34	31	757	11.9	60	31	756	8.5	30
3,000	31	712	3.2	40	31	711	1.8	38	31	708	0.0	44	31	716	6.2	32	30	711	6.5	31	31	713	9.4	52	31	711	5.0	33
4,000	31	628	−2.8	35	31	628	−4.1	34	31	624	−5.6	40	31	632	0.2	26	30	629	0.3	24	31	613	3.9	42	31	628	−1.1	29
5,000	31	553	−9.7	41	31	552	−10.4	33	31	549	−11.8	37	30	558	−5.9	----	30	554	−5.9	23	31	558	−1.8	32	31	554	−7.4	----
6,000	31	485	−16.6	40	31	484	−17.4	30	31	481	−18.8	42	29	490	−11.7	----	30	487	−12.9	28	31	491	−7.7	34	31	486	−14.2	----
7,000	31	424	−24.1	40	31	423	−24.6	36	31	420	−26.0	39	29	430	−18.8	----	30	426	−20.5	31	29	431	−14.2	33	31	425	−21.6	----
8,000	30	368	−31.6	----	31	368	−32.3	----	31	364	−33.3	----	28	374	−26.4	----	28	372	−28.2	----	29	377	−20.9	36	31	370	−29.4	----
9,000	28	318	−39.6	----	31	318	−39.9	----	31	315	−40.7	----	27	324	−34.1	----	28	322	−36.2	----	29	328	−28.2	----	30	321	−37.2	----
10,000	25	274	−47.1	----	29	274	−46.9	----	31	272	−47.6	----	26	281	−41.1	----	27	279	−43.5	----	29	285	−35.9	----	29	277	−44.2	----
11,000	19	236	−53.2	----	26	236	−52.7	----	29	233	−53.6	----	25	242	−48.0	----	22	240	−49.8	----	29	246	−43.8	----	29	238	−50.7	----
12,000	15	202	−58.2	----	25	202	−56.8	----	29	199	−57.9	----	24	207	−54.2	----	22	206	−55.3	----	26	212	−51.5	----	28	204	−56.2	----
13,000	11	172	−60.7	----	20	172	−59.9	----	23	170	−60.2	----	21	177	−59.6	----	21	175	−59.5	----	25	181	−58.7	----	23	174	−60.1	----
14,000					12	147	−62.3	----	16	145	−62.2	----	18	151	−64.3	----	19	149	−63.2	----	23	154	−65.7	----	15	149	−61.6	----
15,000									7	124	−63.5	----	15	129	−67.4	----	13	127	−64.8	----	11	131	−70.7	----	7	128	−63.3	----
16,000													12	109	−70.7	----	13	108	−66.4	----								
17,000													7	92	−70.6	----	6	92	−67.2	----								
18,000													5	78	−67.1	----												

Altitude (meters) m. s. l.	S. S. Marie, Mich. (221 m.)				Seattle, Wash.[1] (22 m.)				Spokane, Wash. (598 m.)				Swan Island, West Indies (10 m.)				Tacubaya, Mexico (2,306 m.)				Tampa, Fla. (3 m.)				Tatoosh Island, Wash. (31 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	993	5.1	86	30	1,015	14.6	79	31	948	12.1	67	31	1,011	25.7	83	31	776	12.8	69	30	1,018	20.7	76	31	1,013	12.3	89
500	31	960	5.3	83	30	959	13.8	67					31	956	22.1	84					30	961	19.3	62	31	958	13.6	71
1,000	31	903	3.6	72	30	904	11.7	59	31	904	14.1	53	31	902	18.8	82					30	907	16.3	60	31	903	11.2	66
1,500	31	849	2.2	58	30	851	8.9	55	31	852	11.5	51	31	852	16.0	77					30	855	13.7	54	31	850	9.0	59
2,000	31	797	.6	56	30	800	6.5	50	31	802	8.5	51	31	803	13.3	78					30	805	11.6	50	31	800	6.6	55
2,500	31	749	−1.2	53	30	753	3.8	51	31	754	5.3	48	31	756	11.1	72	31	758	11.4	71	30	758	9.3	41	31	752	3.8	53
3,000	31	703	−3.6	55	30	708	.9	45	31	710	2.1	44	30	712	9.2	66	31	714	7.7	77	30	714	6.9	32	31	707	1.1	51
4,000	31	619	−9.4	52	29	624	−5.7	47	31	626	−4.5	41	28	630	3.7	62	31	632	1.0	85	30	631	1.5	25	30	624	−4.9	45
5,000	30	543	−15.2	49	28	549	−11.7	53	31	551	−11.1	44	25	558	−1.6	51	31	558	−3.2	51	30	557	−4.1	----	30	549	−11.6	45
6,000	30	475	−21.7	45	28	481	−18.7	52	30	483	−17.7	44	23	491	−6.9	39	31	491	−8.8	34	29	489	−10.1	----	27	481	−18.3	45
7,000	30	414	−29.1	49	28	420	−26.0	52	29	422	−24.9	44	21	432	−12.9	35	31	431	−15.1	29	29	429	−17.2	----	27	420	−25.7	48
8,000	30	359	−36.2	----	26	365	−33.8	----	29	367	−32.5	42	19	378	−19.2	----	31	376	−22.0	33	29	374	−23.9	----	27	365	−33.1	----
9,000	30	310	−42.9	----	26	315	−41.8	----	29	317	−40.6	----	19	329	−26.4	----	31	328	−29.4	----	29	326	−30.9	----	27	315	−40.8	----
10,000	29	267	−48.5	----	26	272	−49.0	----	28	274	−48.0	----	18	287	−34.0	----	31	285	−37.2	----	29	283	−38.1	----	26	272	−47.9	----
11,000	27	230	−53.0	----	26	233	−56.0	----	28	235	−53.8	----	17	247	−42.4	----	31	246	−45.0	----	28	244	−45.2	----	24	233	−54.9	----
12,000	21	196	−55.3	----	24	198	−59.9	----	28	201	−57.8	----	15	213	−50.7	----	30	211	−52.9	----	27	209	−52.0	----	19	199	−59.0	----
13,000	12	166	−55.5	----	21	169	−61.8	----	21	171	−60.7	----	15	182	−58.7	----	24	180	−60.5	----	23	179	−58.1	----	17	169	−59.0	----
14,000	9	142	−57.4	----	17	144	−62.1	----	8	145	−61.8	----	13	155	−65.3	----	6	153	−67.3	----	19	152	−64.6	----	10	144	−57.9	----
15,000					12	123	−63.2	----					7	132	−69.4	----									6	124	−59.0	----
16,000					7	104	−62.7	----																				

See footnotes at end of table.

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during October 1944*—Continued

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL—Continued

Altitude (meters) m. s. l.	Toledo, Ohio (191 m.)				Tongue Point, Oreg.[1] (21 m.)				Washington, D. C. (25 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	998	9.1	76	21	1,019	14.7	84	31	1,017	11.9	77
500	31	961	10.4	68	21	963	13.4	81	31	961	11.9	64
1,000	21	905	7.7	63	21	907	12.0	70	31	905	9.5	63
1,500	31	852	5.9	56	21	855	10.0	64	31	852	6.8	63
2,000	31	800	3.8	53	21	804	7.8	48	31	802	4.6	56
2,500	31	753	1.5	51	21	756	5.5	35	31	754	2.4	52
3,000	31	707	−0.9	48	21	712	2.5	40	31	708	0.2	45
4,000	31	623	−6.3	45	21	628	−3.0	40	31	625	−4.9	36
5,000	30	548	−12.7	40	21	553	−9.4	48	31	550	−10.9	35
6,000	30	480	−19.7	41	20	485	−16.7	----	31	482	−17.6	----
7,000	29	419	−26.8	35	20	423	−24.0	----	31	420	−24.7	----
8,000	29	364	−34.1	----	18	368	−32.4	----	31	366	−31.7	----
9,000	27	314	−41.0	----	17	317	−41.1	----	31	316	−38.7	----
10,000	25	271	−46.9	----	16	274	−49.2	----	30	274	−44.4	----
11,000	25	233	−51.4	----	14	235	−54.9	----	26	235	−50.2	----
12,000	22	199	−54.7	----	13	201	−58.7	----	24	201	−55.0	----
13,000	15	171	−57.8	----	12	172	−59.0	----	19	172	−58.5	----
14,000	10	146	−60.1	----	12	146	−60.2	----	12	146	−61.5	----
15,000	7	123	−60.6	----	9	124	−63.0	----	5	126	−63.9	----

LATE REPORT FOR AUGUST

Altitude (meters) m. s. l.	Rapid City, S. Dak. (981 m.)				Altitude (meters) m. s. l.	Rapid City, S. Dak. (981 m.)			Altitude (meters) m. s. l.	Rapid City, S. Dak. (981 mf.)		
	Number of observations	Pressure	Temperature	Relative humidity		Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	902	20.3	52	5,000	31	555	−5.1	45	11,000	31	242	−46.5	----
1,000	31	900	20.7	51	6,000	31	488	−11.8	39	12,000	29	208	−51.2	----
1,500	31	849	19.6	44	7,000	31	428	−18.6	43	13,000	27	178	−55.0	----
2,000	31	801	16.3	46	8,000	31	373	−25.7	----	14,000	24	152	−58.5	----
2,500	31	754	12.9	48	9,000	31	324	−33.1	----	15,000	16	130	−60.8	----
3,000	31	711	9.4	48	10,000	31	281	−40.4	----	16,000	11	110	−61.5	----
4,000	31	629	2.3	44										

LATE REPORT FOR SEPTEMBER

Surface	30	904	14.3	54	5,000	30	552	−7.9	49	11,000	29	238	−50.2	----
1,000	30	902	14.6	53	6,000	30	484	−14.9	45	12,000	26	204	−54.2	----
1,500	30	850	14.0	48	7,000	30	424	−22.2	45	13,000	23	174	−56.7	----
2,000	30	801	11.0	50	8,000	29	369	−29.5	----	14,000	15	149	−58.2	----
2,500	30	754	7.8	51	9,000	29	320	−37.1	----	15,000	8	127	−58.3	----
3,000	30	709	5.2	50	10,000	29	276	−44.2	----	16,000	6	108	−57.9	----
4,000	30	627	−1.3	47										

[1] U. S. Navy.
[2] Insufficient observations.
[3] No observations taken.
[4] Data not yet received.

NOTE.—All observations taken near 11 p. m. E. S. T. except at Mazatlan and Merida where they are taken near 9 p. m.
"Number of Observations" refers to pressure only, as temperature and humidity data are sometimes missing for some observations at certain levels. Relative humidity data are not used in daily observations when the temperature is below −40.0° C.
None of the means included in these tables are based on less than 15 surface or 5 standard level observations.
Means for observations obtained by the electric hygrometer have been adjusted to compensate for the values occurring below the operating range of the humidity element.
Electric hygrometers are now in use at all stations.

TABLE 2.—*Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during October 1944. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (538 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	30	132	2.8	31	181	1.9	31	341	1.9	30	231	1.8	31	241	1.8	31	332	1.8	29	72	3.8	31	251	3.9	27	243	1.1	29	355	1.0	31	298	1.1	31	36	1.5	31	122	1.4
500							31	338	2.7										29	75	4.1	31	257	5.2	27	235	2.6	29	14	1.9	31	301	2.0						
1,000	30	164	2.5				31	349	3.4				31	246	2.3	31	307	1.1	29	58	2.5	29	257	6.6	26	267	5.6	29	351	2.4	30	303	2.6						
1,500	30	182	2.4				30	358	3.6	30	255	3.1	31	262	3.1	31	178	0.8	28	21	2.2	25	276	7.5	24	275	8.5	29	353	3.3	28	304	3.4				31	123	1.6
2,000	28	202	1.7	31	183	2.0	28	338	4.9	30	269	5.5	30	283	4.4	31	142	2.0	27	22	2.6	24	283	8.3	20	290	11.0	25	326	4.1	28	309	5.8	31	58	1.9	31	135	1.6
2,500	27	247	2.1	31	194	2.0	26	338	6.1	29	277	4.2	30	295	6.2	31	168	2.8	27	22	2.7	19	285	9.2	18	288	13.7	23	312	4.7	25	308	7.1	29	68	1.6	29	186	1.6
3,000	26	271	3.1	31	221	2.1	25	336	6.8	29	292	4.8	30	300	7.1	31	185	3.3	26	14	3.2	19	287	10.2	18	292	15.0	23	322	4.5	24	310	9.1	29	339	0.9	29	219	1.5
4,000	24	305	3.3	27	243	3.9	25	328	7.7	28	290	5.9	27	298	8.5	29	175	2.8	21	13	3.3	17	291	12.6	16	287	17.0	19	313	6.7	18	307	6.1	28	283	5.1	27	240	3.5
5,000	24	306	4.7	22	261	5.8	20	308	10.4	27	287	5.7	26	304	8.6	27	244	3.5	19	318	1.9	12	307	13.6	13	291	20.4	18	305	7.7	16	304	8.0	27	286	5.7	23	269	6.2
6,000	21	280	5.5	22	258	7.6	18	302	10.6	25	286	4.8	23	308	8.0	27	255	4.0	18	289	4.2	11	309	15.2				18	294	9.4	13	283	6.5	24	289	6.2	21	262	5.5
8,000	16	266	10.5	18	275	11.1	15	304	13.9	23	302	5.8	19	308	10.2	22	256	5.7	16	293	8.6							12	269	14.1				24	289	6.2	13	274	8.9
10,000	12	274	12.3	16	271	16.8	13	287	18.0	22	294	4.8	17	294	11.8	13	239	5.6	11	285	12.3													17	303	6.7			
12,000				12	263	19.0				11	167	3.1							10	278	20.1													13	286	8.2			
14,000				10	271	19.9																																

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (15 m.)			Mobile Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	176	1.1	31	321	1.3	26	322	0.9	31	261	2.3	29	40	2.8	30	283	1.7	31	108	1.7	31	309	0.5	30	316	1.3	31	61	2.5	31	358	2.7	31	329	2.2	30	303	1.7
500							26	328	1.4				29	33	3.6	30	278	2.5				31	312	1.8	30	312	1.2	31	61	5.8	31	4	3.3	31	333	2.6	30	289	3.1
1,000							26	318	1.7	31	263	3.3	28	22	2.9	28	273	3.7	31	120	2.4	31	323	2.1	30	178	0.3	28	53	4.7	31	8	3.6	31	323	2.3	27	295	5.3
1,500				31	312	1.5	25	305	4.1	30	256	4.5	27	351	3.4	26	277	5.4	31	144	1.9	31	315	2.8	30	177	2.6	27	50	3.9	30	9	4.5	31	323	3.1	27	305	6.8
2,000	31	175	1.1	31	286	1.3	25	311	5.6	30	261	6.0	26	319	3.8	25	288	6.2	31	175	1.6	29	322	2.9	30	185	3.1	25	24	3.0	28	15	5.5	27	323	4.3	26	302	7.1
2,500	31	188	1.6	31	259	1.6	25	312	7.4	29	260	5.6	25	314	3.8	23	296	8.1	31	187	2.3	29	317	4.7	28	181	3.9	24	11	1.7	26	6	4.2	26	324	5.2	22	291	8.1
3,000	31	189	1.9	31	244	2.2	24	299	9.5	28	270	6.3	24	302	3.7	21	295	9.0	31	203	2.5	26	328	4.9	26	183	4.3	23	334	1.2	22	350	4.9	24	325	6.0	17	281	8.1
4,000	29	205	2.2	27	246	2.3	22	298	9.7	23	272	4.6	21	276	5.4	12	316	12.1	30	194	2.8	24	322	7.1	20	185	4.2	21	245	2.5	14	341	2.8	23	320	6.8			
5,000	23	196	3.3	24	226	2.7	21	289	11.5	17	262	4.7	20	271	8.0	10	310	11.1	28	228	2.5	22	314	7.2	20	206	4.8	18	268	3.9				19	309	7.5			
6,000	22	205	3.8	23	270	1.8	20	289	11.3	14	267	5.6	18	260	10.8				28	251	4.5	21	318	7.5	15	225	4.8	17	263	8.2				19	306	8.8			
8,000	18	274	2.1				13	279	13.8	11	267	5.7	15	263	17.3				26	264	8.4	18	304	10.7	12	225	8.0	14	262	16.0				14	304	12.0			
10,000	16	268	3.8				12	257	18.2				11	264	21.6				22	264	13.3	15	298	16.0				11	267	24.3									
12,000	12	270	9.4																15	263	19.9	10	280	19.3															
14,000																																							

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (402 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. * (15 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (12 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	276	2.9	29	216	2.2	28	301	1.3	31	184	0.8	30	72	0.7	30	302	1.3	31	273	1.7	31	99	2.3				29	296	2.2	29	239	1.5	31	176	0.4	27	321	1.9
500	30	275	1.7	29	208	2.1	28	294	1.5	31	167	0.7				30	281	1.9	31	273	2.6	31	102	2.2				29	298	2.7	29	194	2.2				26	301	2.5
1,000	30	182	1.3	29	208	2.3	28	268	1.6	31	140	1.5	30	75	0.7	30	276	2.6	27	267	4.6	31	109	1.7				26	292	6.5	26	195	4.2	31	181	1.3	26	307	4.2
1,500	29	184	1.7	29	228	2.7	28	277	3.5	31	148	2.2	30	236	0.5	30	293	4.1	25	282	6.3	31	87	1.1				23	300	8.3	24	193	6.0	30	191	2.3	26	315	6.4
2,000	28	186	1.6	28	241	3.2	27	284	5.8	31	167	3.4	30	269	2.6	28	295	5.7	24	285	7.7	31	75	0.7				19	301	9.6	19	188	6.4	29	198	3.1	23	315	8.3
2,500	25	179	2.1	27	275	3.8	27	291	7.5	31	173	4.1	29	275	4.7	27	294	6.6	23	299	9.4	30	59	0.6				16	304	10.7	17	191	7.3	26	206	3.3	23	310	8.6
3,000	25	173	2.2	26	289	4.4	27	298	7.7	31	193	4.3	26	290	6.3	26	302	8.6	21	304	10.7	27	12	0.6				14	308	12.7	16	199	7.7	26	219	3.6	22	306	8.2
4,000	25	179	2.6	25	292	5.7	26	298	10.3	30	205	4.7	25	298	6.6	22	307	8.5	19	313	11.3	26	284	1.3				14	313	14.4	11	209	5.7	25	226	3.9	19	298	11.4
5,000	24	242	1.4	24	294	7.4	26	300	10.7	25	224	5.8	23	293	7.9	20	300	8.6	19	318	11.4	23	286	3.4				11	299	17.2				24	230	4.2	18	291	12.4
6,000	21	311	1.4	23	286	7.4	23	311	10.4	24	245	7.0	21	306	8.4	20	307	8.2	19	322	12.6	22	288	5.0										23	221	3.9	13	279	15.2
8,000	21	287	3.1	19	293	10.0	21	303	10.8	21	254	11.5	17	316	7.9	19	306	9.5	17	319	11.8	17	285	10.5										19	242	5.1			
10,000	18	274	7.1	16	280	12.8	15	310	13.9	18	272	13.8	13	303	5.6	17	291	12.0	17	319	16.5	13	276	15.9										16	261	5.3			
12,000	12	252	8.7	12	275	14.3				14	271	18.6				15	295	13.9	11	317	16.4	12	265	23.0															
14,000																10	290	13.6																					

*Insufficient data; new theodolite platform and inflation room under construction.

TABLE 3.—*Maximum free air wind velocities (m. p. s.), for different sections of the United States based on pilot balloon observations during October 1944*

Section	Surface to 2,500 meters (m. s. l.)					Above 2,500 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast [1]	41.8	WNW.	1,197	19	Portland, Maine	54.8	NW.	4,157	30	Portland, Maine	80.0	WNW.	12,507	19	Portland, Maine.
East-Central [2]	48.0	E.	1,164	21	Huntington, W. Va.	39.0	NNW.	4,676	28	Greensboro, N. C.	86.4	WNW.	15,879	30	Huntington, W. Va.
Southeast [3]	34.7	SSE.	813	18	Miami, Fla	40.0	N.	3,832	27	Spartanburg, S. C.	65.8	WSW.	9,021	22	Jacksonville, Fla.
North-Central [4]	41.0	WNW.	2,395	24	St. Paul, Minn.	44.6	NNW.	4,892	26	Milwaukee, Wis.	68.0	WNW.	9,852	30	Marquette, Mich.
Central [5]	33.6	N.	1,766	11	Springfield, Mo.	40.8	NNW.	3,868	26	Joliet, Ill.	57.0	SSW.	19,101	16	Omaha, Nebr.
South-Central [6]	28.8	SSW.	1,376	31	Tulsa, Okla.	34.2	NW.	4,530	11	Oklahoma City, Okla.	51.2	SSW.	15,245	19	Jackson, Miss.
Northwest [7]	32.4	W.	1,757	23	Havre, Mont.	44.0	WNW.	3,737	24	Havre, Mont.	68.0	WNW.	10,785	24	Glasgow, Mont.
West-Central [8]	32.5	SSW.	2,305	31	Winnemucca, Nev.	35.2	S.	3,978	29	Red Bluff, Calif.	69.8	E.	12,951	23	Ely, Nev.
Southwest [9]	35.0	ENE.	2,500	25	Mt. Laguna, Calif.	47.0	SW.	4,910	1	Tucson, Ariz.	60.0	SSW.	7,983	1	Phoenix, Ariz.

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada, and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By BENNETT SWENSON

PRECIPITATION during October was above normal in only seven States, i. e., Florida, South Carolina, Virginia, West Virginia, Maryland, Delaware, and New Mexico. The above-normal precipitation in the eastern States was due mainly to the hurricane which passed northward from Florida on October 19–21. In most sections between the Appalachian and the Rocky Mountains the month was abnormally dry, especially in the lower Mississippi and Ohio valleys, portions of the East Gulf, the extreme upper Mississippi and Missouri valleys and the Great Basin, where monthly totals were less than 50 percent of normal.

River stages were above normal in the Middle and South Atlantic States, Tennessee, Kentucky, and the upper Mississippi valley. Elsewhere stages were generally below normal. Flooding during the month was generally light and confined principally to the eastern Carolinas, West Virginia, and the Neosho River in Kansas.

Atlantic Slope drainage.—There were two periods of flooding in this area. The first was a result of heavy rains on the last 2 days of September, centered principally over the Carolinas and southern Virginia. The second was due to heavy rains during the period October 19–21 associated with a tropical hurricane. The heavy rain area extended along the Atlantic Slope from Florida to New England, but flooding was confined mainly to the Carolinas and southern Virginia.

The first period of rainfall, September 29–30, was heaviest in the upper and middle portions of the Roanoke, Tar, Neuse, Cape Fear, and Pee Dee River basins, several stations reporting over 5 inches of rainfall in 24 hours. Overflows were moderately heavy in these rivers during the first week or 10 days of October.

The second period of rainfall, October 19–21, averaged between 1 and 2 inches over the entire drainage area with some totals of over 7 inches in Florida and southeastern Georgia. Flooding resulted only in the Roanoke and Pee Dee Rivers and the crests were lower than in the earlier rise.

Ohio Basin.—The rain area in connection with the hurricane previously mentioned extended into the upper Ohio valley in West Virginia and western Pennsylvania on October 20–21. Moderate to high stages resulted in the Allegheny and Monongahela Rivers with light overflows occurring in the West Fork of the Monongahela River in West Virginia. Elsewhere in the Ohio Basin, except in Kentucky, and Tennessee, stages continued generally well below normal.

Arkansas Basin.—Rains averaging 2 inches over the Neosho and Verdigris Rivers on October 2–3 resulted in light overflows. The Neosho River which had subsided from an earlier flood in September rose to a stage of 19.0 feet on October 4 at Oswego, Kans., 2 feet above flood stage.

[All dates in October unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Feet*			*Feet*	
Dan: Danville, Va.	11	Sept. 30	1	12.9	1
Roanoke:					
Randolph, Va.	21	22	23	22.0	22
Weldon, N. C.	31	Sept. 30	5	[2] 40.2	1
		22	24	[2] 36.4	24
Williamston, N. C.	10	Sept. 25	13	12.9	Sept. 27, 7
		26	[3]	10.9	28
Fishing Creek: Enfield, N. C.	14	1	3	14.2	2
Tar:					
Rocky Mount, N. C.	9	Sept. 30	5	12.1	2
Tarboro, N. C.	18	3	7	21.8	5–6
Greenville, N. C.	13	3	9	15.5	6
Neuse:					
Neuse, N. C.	14	Sept. 30	6	20.6	3
Smithfield, N. C.	13	1	8	20.0	3
Goldsboro, N. C.	14	6	11	16.9	10
Kinston, N. C.	14	10	13	14.6	12
Haw: Moncure, N. C.	20	Sept. 30	2	27.3	1
Cape Fear:					
Fayetteville, N. C.	35	1	4	44.5	2
Lock No. 2, Elizabethtown, N. C.	20	1	6	30.8	3
Pee Dee:					
Cheraw, S. C.	30	2	3	34.0	1
Mars Bluff Bridge, S. C.	17	4	8	18.1	6
		24	27	17.7	26
Catawba: Catawba, N. C.	8	Sept. 30	Sept. 30	8.8	Sept. 30
MISSISSIPPI SYSTEM					
Ohio Basin					
West Fork:					
Weston, W. Va.	15	21	21	17.0	21
Clarksburg, W. Va.	5	21	21	6.2	21
Arkansas Basin					
Neosho: Oswego, Kans.	17	3	7	19.0	4

[1] Provisional.
[2] Estimated.
[3] Continued at end of month.

CLIMATOLOGICAL DATA

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see REVIEW, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature							Precipitation					
			Monthly extremes							Greatest monthly		Least monthly	
	Section average	Departure from the normal	Station	Highest	Date	Station	Lowest	Date	Section average	Departure from the normal	Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	64.2	−0.6	8 stations	92	[1]6	Valley Head	24	28	0.56	−2.33	Greenville	3.04	6 stations	0.00
Arizona	64.0	+2.4	Mohawk	112	[1]8	Fort Valley	20	17	.62	−.24	Ruby	4.14	Truxton	.00
Arkansas	63.9	+1.1	2 stations	95	[1]3	Gilbert	25	13	1.13	−2.04	Bentonville	4.38	5 stations	.00
California	61.9	+1.5	El Centro	104	[1]10	Boca	18	[1]6	1.21	−.02	Vollmers	6.90	31 stations	.00
Colorado	49.6	+2.7	3 stations	89	[1]5	Fraser	7	30	.98	−.21	Wolf Creek Pass	4.15	4 stations	.00
Florida	71.2	−1.8	do	96	[1]1	High Springs	35	28	5.84	+1.68	Vero Beach	15.45	Chattahoochee	.00
Georgia	64.0	−1.0	5 stations	93	[1]1	Blairsville	25	30	2.34	−.30	Brunswick Airport	11.45	Donalsonville	.03
Idaho	52.0	+4.7	Bliss	89	8	Landmark	8	[1]6	.71	−.79	Nezperce	2.66	2 stations	.06
Illinois	56.1	+.3	Mt. Vernon	94	4	Freeport	21	22	1.22	−1.42	Macomb	4.26	Carlyle	.00
Indiana	55.0	.0	New Harmony	91	6	3 stations	21	[1]28	1.13	−1.63	La Porte	5.33	Moores Hill	T
Iowa	53.8	+2.0	2 stations	84	31	Decorah	18	22	1.08	−1.27	Donnellson	3.33	Forest City	.20
Kansas	58.9	+1.6	do	91	[1]6	Oberlin	25	12	1.73	−.24	Independence	4.70	Hudson	.41
Kentucky	57.5	−.9	do	90	4	2 stations	23	28	1.31	−1.34	Ashland	3.02	Murray	.15
Louisiana	66.9	−1.6	Enon Tower	98	1	Tallulah	30	28	1.16	−2.09	Lake Charles	4.75	3 stations	.00
Maryland-Delaware	55.0	−1.3	Great Falls, Md	88	7	Oakland, Md	17	[1]16	3.36	+.27	Friendsville, Md	5.57	Aberdeen, Md	1.87
Michigan	48.1	−.6	2 stations	84	6	2 stations	11	[1]22	1.17	−1.53	Niles	2.74	Croton Dam	.17
Minnesota	48.5	+2.0	3 stations	81	[1]27	do	17	[1]10	.36	−1.49	Red Lake	1.33	Milaca	T
Mississippi	64.9	−.6	Utica	95	3	3 stations	30	[1]28	.78	−1.78	Senatobia	4.26	Leakesville	.00
Missouri	59.6	+1.9	2 stations	92	[1]6	2 stations	25	[1]17	1.68	−1.28	Galena	5.94	Cape Girardeau	.02
Montana	49.8	+4.7	Forsyth	86	9	Outlook	4	1	.23	−.83	Northeast Entrance	1.93	27 stations	.00
Nebraska	54.0	+2.2	Fort Robinson	92	5	4 stations	18	[1]19	.80	−.65	Auburn	2.68	Potter	.00
Nevada	54.6	+3.9	Mesquite	98	11	Fish Creek Ranch	13	25	.33	−.29	Lewers Ranch	3.23	7 stations	.00
New England	48.6	−.9	Weston, Mass	88	7	Fort Kent, Maine	9	31	2.85	−.66	Fort Fairfield, Maine	7.65	Windsor Locks, Conn	1.42
New Jersey	53.6	−1.0	Newark	88	7	4 stations	18	23	2.41	−1.20	Hammonton	5.43	Layton	.50
New Mexico	55.0	+1.3	San Marcial	96	1	Eagle Nest	14	30	1.39	+.23	Valmora	4.63	3 stations	.00
New York	48.8	−1.1	Avon	90	6	Tupper Lake	12	28	2.41	−.90	Morrisville	4.57	Kendall	.61
North Carolina	59.6	−.4	2 stations	95	7	Mount Mitchell	18	[1]27	3.06	−.20	Wilmington	7.91	Murphy	.73
North Dakota	48.7	+4.5	3 stations	84	27	2 stations	11	21	.12	−.87	Milnor	1.42	37 stations	.00
Ohio	53.3	−.3	2 stations	87	6	Fredericktown	17	28	1.42	−1.10	Willoughby	5.86	Dayton Airport	.10
Oklahoma	63.9	+1.4	3 stations	94	[1]1	Smithville	28	13	2.73	−.33	Anadarko	6.73	Elk City	.28
Oregon	53.6	+3.8	Huntington	88	11	Wickiup Dam	16	6	1.09	−.84	Willow Creek	5.82	Sod House	.04
Pennsylvania	50.8	−1.7	Phoenixville	90	7	Bradford	12	28	3.15	−.12	Lake Lynn	5.67	Stroudsburg	1.03
South Carolina	63.4	−.4	Walterboro	100	3	Dillon	29	28	3.68	+.81	Florence No. 2	7.13	Myrtle Beach	1.41
South Dakota	51.4	+2.6	Murdo	88	14	3 stations	17	[1]11	.66	−.51	Aberdeen	3.24	Ralph	.06
Tennessee	59.0	−.8	Coldwater	90	4	Rugby	21	[1]28	1.43	−1.37	Springfield	4.85	Etowah	.08
Texas	67.4	−.3	Smithville	98	2	Stratford	29	12	1.39	−1.30	Del Rio	6.50	12 stations	.00
Utah	53.0	+3.8	St. George	95	7	Woodruff	15	24	.49	−.65	Hewinta Ranger Sta	2.77	Vernal	.09
Virginia	56.7	−.7	Diamond Springs	91	7	Big Meadows	20	28	3.29	+.28	Balcony Falls	5.88	2 stations	1.56
Washington	54.4	+4.3	Mottinger	92	2	2 stations	22	[1]4	1.56	−1.48	Tatoosh Island	10.26	Naches Heights	T
West Virginia	53.7	−1.0	Romney	88	7	Seneca State Forest	15	27	4.07	+1.19	Stoney River Dam	7.12	Parkersburg	1.89
Wisconsin	48.9	+.6	Kenosha	85	6	Coddington	12	22	.59	−1.84	Solon Springs	2.82	Shawano	.08
Wyoming	47.7	+3.9	Fort Laramie	86	24	Yoder	11	19	.58	−.53	Northeast Entrance	1.93	Carpenter	.00
Alaska (September)	44.3	+.2	Tree Point	79	8	Shungnak	14	30	3.56	−.05	Yakataga	16.28	Circle Springs	.76
Hawaii	73.2	−.6	Waianae	95	1	Haleakala	39	[1]4	5.90	+.55	Pilhonua	39.80	5 stations	.00
Puerto Rico	78.1	+.1	Ponce	98	6	Juncos	55	13	8.48	+.32	Rio Blanco	19.64	Boringuen Field	1.71

[1] Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

District and station	Elevation of instruments: Barometer above sea level	Thermometer above ground	Anemometer above ground	Pressure: Station	Sea level	Departure from normal	Temperature of the air: Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Wind: Average hourly velocity	Prevailing direction	Maximum velocity: Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder storms
	Ft.	Ft.	Ft.	Mbs.	Mbs.	Mbs.	°F	°F	°F		°F	°F		°F	°F		°F	%	In.	In.	In.		Mi.								0–10	In.	In.	
New England							50.3	−0.4										77	2.75	−0.5												5.4			
Eastport	75	67	85	1,012.9	1,015.9	0.0	47.0	−0.5	73	7	53	27	31	41	24	560	40	79	5.13	+1.6	1.39	12	10.9	sw.	41	e.	21	5	10	16	7.0	0.0	0.0	1
Greenville, Maine	1,070	6	41	977.0	1,017.6	.....	42.8	−1.7	73	18	52	16	31	33	39	691	36	...	3.88	+.3	1.64	10	....	n.	....	.....	...	2	15	14	....	.5	.0	1
Portland, Maine [1]	103	5	43	1,012.9	1,016.9	−.4	47.6	−2.4	78	7	58	20	31	37	42	542	42	86	2.36	−.8	1.11	8	9.0	n.	31	ne.	21	13	8	10	5.0	.0	.0	2
Concord [1]	289	5	45	1,006.4	1,018.0	+.4	47.3	−.5	81	7	60	17	31	35	44	547	38	78	1.74	−1.1	1.25	6	7.8	nw.	34	nw.	29	12	11	8	5.5	.0	.0	2
Burlington [1]	403	5	51	1,002.7	1,018.3	+1.0	46.4	−2.8	75	7	56	21	28	36	32	579	39	80	2.56	−.4	.90	10	9.8	s.	35	nw.	19	4	14	13	6.7	T	.0	2
Boston [1]	124	33	62	1,012.2	1,017.3	−.3	53.8	+.2	86	7	62	30	31	45	27	363	42	70	2.58	−.6	1.78	71	1.2	nw.	41	ne.	21	11	10	10	5.4	.0	.0	1
Nantucket	12	11	59	1,016.3	1,016.9	−.7	54.6	+.4	69	19	60	37	31	49	20	322	46	80	2.39	−1.0	1.48	8	11.9	sw.	50	ne.	28	10	8	13	5.7	.0	.0	0
Block Island	26	11	46	1,015.9	1,017.3	−.3	54.8	−.1	72	7	61	37	28	49	20	319	47	76	1.89	−1.7	1.40	11	16.0	n.	43	nw.	29	15	8	8	4.6	.0	.0	0
Providence [2]	159	46	60	1,011.5	1,018.0	+.4	54.6	+2.4	78	7	63	32	31	46	27	331	41	72	3.33	+.2	2.52	6	8.0	n.	28	nw.	29	10	9	12	5.4	.0	.0	1
Hartford [1]	159	5	44	1,011.9	1,018.3	+.3	51.4	+.2	86	7	64	25	23	39	41	430	41	78	2.38	−1.1	1.66	5	7.9	s.	30	nw.	15	16	8	7	4.5	.0	.0	1
New Haven [1]	107	5	39	1,013.9	1,018.3	+.3	52.7	+.9	80	7	63	26	23	42	36	391	42	74	1.99	−1.4	1.51	8	7.2	ne.	25	n.	29	17	8	6	4.2	T	.0	1
[Middle Atlantic							55.6	−0.7										75	2.72	−0.2											4.5			
Albany [1]	97	26	40	1,014.6	1,018.3	+.3	48.6	−.7	82	7	59	24	31	38	36	512	39	76	2.69	+.3	1.10	10	8.2	s.	31	w.	7	10	11	10	5.4	.0	.0	4
Binghamton [2]	871	60	79	987.1	1,020.0	+2.0	48.9	−1.1	78	7	60	25	23	38	44	505	40	83	3.52	+.6	1.35	10	5.4	w.	20	sw.	7	9	14	8	5.5	T	.0	3
New York	314	415	454	1,006.4	1,018.3	+.3	56.3	.0	83	7	64	35	28	48	23	283	42	66	3.44	−.1	2.57	6	14.8	n.	52	nw.	29	18	5	8	3.8	T	.0	0
Harrisburg [1]	374	30	49	1,005.8	1,019.6	+1.0	53.6	−1.2	84	7	63	29	23	44	35	359	42	75	3.04	+.1	2.05	8	7.1	w.	28	nw.	29	11	10	10	5.1	.0	.0	2
Philadelphia [1]	114	6	56	1,014.6	1,019.3	+1.0	54.7	−.8	85	7	65	31	23	44	36	329	44	74	1.81	−1.0	1.16	7	8.5	nw.	30	e.	20	15	7	9	4.4	.0	.0	1
Reading	323	47	306	1,007.1	1,019.6	.....	54.6	−.8	85	7	65	31	23	45	37	334	.....	.....	1.91	−1.2	1.31	7	9.8	nw.	38	n.	27	18	4	9	4.2	T	.0	1
Scranton	805	72	104	990.2	1,020.0	+1.7	50.6	−1.3	81	7	60	27	23	41	38	455	.....	.....	1.75	−1.3	.58	9	5.9	n.	25	nw.	15	8	16	7	5.4	T	.0	2
Atlantic City	52	37	172	1,016.3	1,019.0	+.7	57.2	+.3	79	7	65	36	28	50	23	256	48	78	4.01	+.8	3.50	8	14.2	nw.	54	e.	20	16	5	10	4.4	.0	.0	2
Trenton	190	89	107	1,011.9	1,019.3	.....	55.0	−.6	84	7	64	34	16	46	32	323	42	70	1.57	−1.2	1.02	7	8.7	nw.	29	n.	15	17	6	8	4.0	T	.0	0
Baltimore [2]	123	100	215	1,014.6	1,019.6	+1.0	57.8	−.4	87	7	66	36	28	49	27	246	45	72	4.01	+1.1	2.01	7	9.4	nw.	34	ne.	20	17	7	7	4.2	.0	.0	1
Washington [2]	112	56	100	1,015.2	1,020.0	+1.4	56.4	−1.0	86	7	66	33	23	46	30	280	45	74	3.22	+.4	1.21	10	6.6	n.	24	ne.	20	14	10	7	4.3	.0	.0	1
Cape Henry	18	8	54	1,017.6	1,018.6	.....	62.1	.0	84	6	68	43	28	56	21	130	53	77	2.59	−.4	1.84	5	13.7	n.	44	e.	20	17	5	9	4.3	.0	.0	0
Lynchburg	686	144	184	994.6	1,019.6	+.6	56.4	−2.1	85	7	67	31	16	45	33	281	44	72	2.01	−1.1	1.62	6	7.6	n.	36	n.	20	16	7	8	4.1	.0	.0	2
Norfolk [2]	91	80	125	1,015.6	1,019.3	+1.0	62.4	−.1	88	7	70	38	28	55	24	131	52	80	3.45	+.4	2.51	6	9.5	n.	32	e.	20	15	6	10	4.8	.0	.0	1
Richmond	144	11	52	1,013.5	1,019.0	+.4	58.8	−.8	87	7	70	34	28	48	36	213	47	77	1.76	−1.1	1.44	7	7.4	n.	25	nw.	27	16	9	6	3.7	.0	.0	0
South Atlantic							64.2	+0.1										78	4.67	+1.4											3.5			
Asheville	2,253	77	92	941.1	1,021.0	+2.0	56.4	+1.1	84	4	68	32	23	44	39	291	42	73	2.06	−.7	1.35	4	7.2	nw.	24	nw.	27	16	8	7	3.7	.0	.0	1
Charlotte [2]	779	63	86	991.2	1,019.6	+1.0	61.6	−.1	89	7	72	38	28	51	30	163	48	76	3.81	+.9	2.89	5	6.5	ne.	28	ne.	29	18	7	6	3.3	.0	.0	3
Greensboro [1]	886	6	56	987.5	1,020.0	.....	58.0	.....	86	7	71	33	23	45	36	247	48	82	2.57	.....	2.11	4	7.3	ne.	35	ne.	20	18	7	6	3.6	.0	.0	1
Hatteras	11	5	50	1,017.3	1,018.0	.0	65.6	−.3	82	7	71	43	28	60	20	73	58	84	5.16	+.2	2.71	5	13.6	ne.	38	nw.	27	11	10	10	4.8	.0	.0	4
Raleigh [1]	376	5	69	1,005.8	1,020.0	+1.7	60.6	−.2	90	7	73	30	28	48	39	181	49	82	2.24	−.6	2.11	6	8.6	ne.	29	s.	20	18	10	3	3.1	.0	.0	1
Wilmington	72	73	107	1,015.9	1,018.6	+.6	64.4	−.9	87	7	74	36	28	54	28	104	55	83	7.91	+4.6	4.73	5	8.2	n.	37	s.	20	19	5	7	3.7	.0	.0	3
Charleston [2]	48	11	92	1,016.3	1,018.3	+.3	67.4	.0	87	7	76	44	28	59	25	46	55	84	4.35	+1.1	4.20	3	10.7	n.	60	ne.	19	15	11	5	3.9	.0	.0	1
Columbia, S. C. [2]	347	70	91	1,006.1	1,019.0	+.7	64.8	+.5	90	6	76	38	28	54	32	94	51	75	2.39	−.2	2.21	4	7.6	ne.	30	ne.	19	19	7	5	3.3	.0	.0	0
Greenville, S. C. [1]	1,040	18	36	982.1	1,019.6	.....	61.8	+1.6	86	7	72	39	28	52	34	155	47	68	2.77	−.4	2.04	5	8.8	ne.	43	ne.	20	20	6	5	2.9	.0	.0	3
Augusta [2]	182	62	77	1,011.9	1,018.6	+.3	65.6	+.3	89	6	78	38	28	53	38	71	48	63	2.90	+.4	2.39	4	5.4	ne.	29	n.	20	22	3	6	2.8	.0	.0	1
Savannah [2]	65	73	152	1,015.6	1,018.3	+.7	68.2	+.3	90	7	78	43	28	58	32	35	56	84	7.96	+5.0	7.85	4	9.9	n.	42	ne.	19	18	9	4	3.4	.0	.0	0
Jacksonville [2]	43	86	110	1,016.3	1,018.0	+1.4	69.6	−1.5	90	7	78	45	28	61	25	22	58	80	10.04	+5.6	9.62	5	9.0	ne.	41	ne.	19	21	4	6	3.3	.0	.0	1
Florida Peninsula							75.3	−1.8										79	6.11	+0.5											4.8			
Key West [2]	21	10	64	1,013.9	1,014.9	+1.0	77.8	−1.3	88	1	82	61	30	73	16	0	68	78	9.50	+3.5	5.64	14	11.0	ne.	56	se.	18	12	11	8	5.1	.0	.0	0
Miami [2]	25	242	249	1,014.2	1,015.2	+.3	75.0	−3.0	86	1	80	59	29	70	19	0	66	84	3.17	−4.6	1.16	17	15.0	ne.	65	s.	19	13	10	8	4.9	.0	.0	4
Tampa [1]	35	6	43	1,015.2	1,016.9	+1.7	73.2	−1.1	92	1	82	53	14	65	24	3	62	74	5.67	+2.6	5.24	4	10.8	n.	56	ne.	19	14	9	8	4.3	.0	.0	0
East Gulf							66.1	−0.4										73	0.91	−2.1											2.1			
Atlanta [1]	1,173	33	72	977.7	1,019.6	+1.3	62.8	+.1	86	4	74	38	28	52	31	130	46	65	1.09	−1.6	.66	6	9.6	nw.	37	n.	20	19	7	5	3.0	.0	.0	3
Macon [2]	370	79	87	1,005.4	1,019.0	+1.0	64.2	−.3	87	7	77	36	28	52	41	95	49	70	1.33	−1.0	1.27	4	6.6	n.	23	nw.	20	23	3	5	2.5	.0	.0	1
Thomasville	273	49	58	1,009.1	1,019.6	+2.3	67.7	−.5	89	6	80	42	28	56	36	40	.....	.....	2.15	−.8	1.88	4	....	....	....	.....	...	21	7	3	....	.0	.0	0
Apalachicola	35	11	51	1,016.6	1,018.3	.....	69.4	−1.2	87	5	78	46	28	61	29	18	57	73	.23	−3.0	.18	2	8.9	nw.	29	n.	19	22	5	4	2.5	.0	.0	1
Pensacola	56	54	79	1,017.3	1,019.6	+2.7	68.8	−1.1	86	7	79	45	13	58	33	35	54	71	.03	−4.2	.03	1	7.4	n.	20	ne.	27	23	7	1	2.0	.0	.0	0
Anniston	741	9	.....	.....	61.1	−1.9	85	7	75	33	28	47	39	174	.....	.....	1.83	−.8	1.31	2	....	nw.	....	.....	...	24	5	2	....	.0	.0	1
Birmingham [1]	700	5	62	995.3	1,020.7	+2.4	61.4	−1.0	86	6	77	31	28	46	44	169	47	76	.46	.....	.40	2	5.8	e.	25	n.	27	22	6	3	2.3	.0	.0	2
Mobile [2]	57	86	161	1,017.6	1,020.0	+2.7	67.8	−1.5	88	2	79	45	11	57	33	47	53	73	.84	−2.8	.63	3	6.6	n.	21	ne.	20	27	25	2	4	1.9	.0	.0	2
Montgomery [2]	218	92	105	1,011.9	1,020.0	+2.0	66.8	+.2	90	6	79	44	28	55	35	55	51	75	.87	−1.6	.66	2	6.2	n.	21	nw.	7	24	2	5	2.0	.0	.0	1
Meridian [1]	375	67	92	1,006.8	1,020.7	+2.7	64.4	+.1	89	4	78	37	28	50	42	99	51	80	.64	−1.8	.57	2	4.4	n.	17	nw.	7	26	2	3	1.6	.0	.0	0
Vicksburg [2]	247	82	102	1,011.5	1,021.0	+3.0	67.4	+.7	90	3	79	43	28	56	32	54	48	80	.20	−2.6	.20	1	7.2	n.	18	ne.	27	26	2	3	1.9	.0	.0	1
New Orleans [4]	53	50	84	1,017.6	1,019.6	+2.7	71.0	+1.0	90	4	79	49	13	63	23	14	56	64	.78	−2.5	.51	3	6.6	ne.	18	e.	16	27	1	3	1.6	.0	.0	3
West Gulf							69.8	+1.3										71	1.91	−1.2											2.8			
Shreveport [1]	249	5	64	1,011.9	1,020.7	+3.1	67.2	+1.6	91	2	82	38	13	53	40	57	54	74	.03	−2.7	.03	1	6.2	n.	21	n.	11	21	9	1	2.4	.0	.0	0
Fort Smith	463	57	82	1,004.1	1,020.3	+2.7	66.1	+3.3	89	1	78	42	13	54	34	55	52	66	3.32	+.3	2.02	5	5.3	e.	26	n.	7	16	12	3	3.2	.0	.0	3
Little Rock [1]	357	5	58	1,008.1	1,021.3	+3.3	65.4	+1.8	90	3	80	38	11	51	41	87	49	68	.01	−2.2	.01	1	6.3	sw.	23	nw.	7	20	11	0	2.4	.0	.0	0
Austin [1]	605	10	41	998.6	1,020.0	.....	69.3	+1.0	91	2	82	42	13	56	35	20	54	68	.35	−2.8	.19	4	6.6	s.	22	n.	11	19	12	0	3.0	.0	.0	2
Brownsville [1]	57	5	54	1,016.3	1,018.3	.....	74.0	−.9	92	6	84	52	13	64	32	1	64	79	3.59	.0	1.79	4	7.6	se.	24	ne.	7	17	12	2	3.5	.0	.0	3
Corpus Christi [1]	20	4	33	1,018.6	1,019.3	+3.4	73.2	+2.1	91	21	83	50	13	63	35	3	61	74	.23	.....	.19	3	8.4	ne.	25	n.	12	26	5	0	2.0	.0	.0	1
Dallas [1]	512	5	45	1,002.4	1,020.7	.....	68.5	+1.2	91	1	82	42	13	55	37	30	54	70	3.30	+.6	2.65	5	6.6	s.	25	s.	31	17	8	6	3.7	.0	.0	1
Fort Worth [1]	679	35	56	996.6	1,021.0	+4.1	68.9	+3.2	90	2	80	42	12	57	30	24	53	64	2.53	−.3	2.25	3	7.9	s.	26	nw.	11	18	10	3	3.5	.0	.0	2
Galveston [2]	54	106	114	1,018.0	1,020.0	+3.1	73.0	+.3	86	5	78	56	12	68	17	5	60	70	2.92	−1.4	2.64	4	7.4	n.	23	n.	11	24	4	3	2.2	.0	.0	2
Houston [1]	158	157	190	1,015.2	1,020.3	.....	72.0	+1.7	90	1	82	49	12	62	27	8	57	75	.01	−3.7	.01	1	8.4	se.	21	se.	31	21	7	3	2.6	.0	.0	2
Palestine	510	64	72	1,003.1	1,021.0	+4.1	69.6	+2.4	89	2	81	46	12	59	30	19	52	60	.12	−3.2	.12	1	5.7	s.	16	ne.	8	20	11	0	2.8	.0	.0	1
Port Arthur	34	89	134	1,018.6	1,020.0	.....	71.0	−.6	89	2	80	49	12	62	26	13	58	82	5.18	+1.8	3.90	3	9.7	n.	24	e.	27	26	2	3	2.0	.0	.0	4
San Antonio [1]	693	8	51	995.6	1,020.0	+3.7	69.7	−.8	91	1	83	43	13	56	36	16	54	68	1.52	−.7	1.42	3	7.1	n.	24	e.	7	17	12	2	3.4	.0	.0	1

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder storms
Ohio Valley and Tennessee	*Ft.*	*Ft.*	*Ft.*	*Mbs.*	*Mbs.*	*Mbs.*	° *F*	° *F*	° *F*		° *F*	° *F*		° *F*	° *F*		° *F*	%	*In.*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
							56.7	+0.1										76	1.33	−1.3											3.9			
Chattanooga [1]	762	6	66	992.9	1,020.7	+1.7	60.0	+2.3	87	6	75	30	28	45	42	210	48	83	.73	−2.3	.60	3	5.7	n.	25	ne.	27	20	6	5	3.1	.0	.0	3
Knoxville [1]	995	27	53	984.8	1,021.0	+3.0	59.4	+.8	86	4	71	32	28	48	35	222	48	79	1.66	−1.0	.88	5	5.8	ne.	28	nw.	7	20	5	6	3.3	.0	.0	2
Memphis [4]	399	5	86	1,006.4	1,020.7	+2.7	62.8	+1.4	88	3	76	34	28	50	39	140	50	78	2.73	.0	1.34	5	6.6	sw.	20	n.	7	22	6	3	2.3	.0	.0	2
Nashville [1]	546	5	72	1,001.0	1,021.0	+2.4	59.7	−1.3	87	4	72	32	28	47	40	216	46	74	.68	−1.8	.33	4	6.4	n.	20	sw.	5	19	6	6	3.4	.0	.0	1
Lexington [1]	989	4	28	985.4	1,022.7	+4.1	56.0	−1.4	84	4	67	30	28	45	36	310	46	78	1.88	−.7	1.46	4	----	ne.	----	----	----	17	7	7	3.7	.0	.0	2
Louisville [2]	525	106	120	1,001.4	1,021.0	+2.4	58.9	−.4	84	6	69	36	28	49	35	229	45	74	.44	−2.2	.44	1	7.2	n.	24	sw.	14	18	5	8	4.2	.0	.0	1
Evansville [1]	431	11	40	1,005.4	1,021.3	+2.7	57.6	+.6	86	6	72	30	28	44	46	273	43	70	.27	−2.6	.26	2	6.7	n.	24	s.	5	16	8	7	4.2	.0	.0	1
Indianapolis [1]	823	5	54	990.9	1,021.3	+3.0	54.0	−.1	82	6	65	29	28	42	42	353	42	74	.61	----	.52	2	7.9	ne.	26	w.	7	19	4	8	3.6	.0	.0	2
Terre Haute [2]	575	68	149	1,000.3	1,021.7	----	57.1	−.1	86	6	68	34	16	46	38	272	43	76	.43	−2.3	.31	4	8.2	n.	23	w.	7	20	4	7	3.6	.0	.0	3
Cincinnati [3]	627	11	51	998.0	1,021.0	+2.4	56.6	+.9	86	6	68	32	30	45	40	291	44	77	.70	−1.8	.62	2	6.4	ne.	20	w.	28	20	2	9	3.9	.0	.0	1
Columbus [3]	822	90	110	990.9	1,021.0	+2.4	55.3	+.1	83	6	65	33	30	46	35	316	42	77	.25	−2.2	.14	5	7.8	n.	25	sw.	28	12	10	9	4.7	.0	.0	1
Dayton [1]	1,003	6	55	984.4	1,021.3	----	54.5	+.7	85	6	66	31	28	44	36	342	40	68	.10	−2.5	.05	3	9.4	nw.	31	w.	28	19	4	8	3.7	.0	.0	0
Elkins [1]	1,947	4	45	951.2	1,021.3	+2.0	50.6	−.5	79	7	63	22	23	38	46	452	42	84	3.96	+1.0	1.69	14	5.5	nw.	34	nw.	7	9	10	12	5.7	T	.0	2
Parkersburg	637	77	84	997.3	1,021.0	+2.4	55.4	−.7	84	6	66	30	28	45	39	321	45	80	1.89	−.6	.63	9	5.6	n.	23	nw.	7	18	6	7	4.0	.0	.0	2
Pittsburgh [1]	842	39	54	989.5	1,020.7	+2.1	53.0	−1.1	82	5	62	29	28	44	31	383	42	73	2.96	+.4	1.39	10	9.1	sw.	25	w.	14	11	9	11	5.2	.0	.0	1
Lower Lakes							51.0	−0.4										77	1.47	−1.4											5.4			
Buffalo [1]	768	34	96	991.2	1,019.6	+2.0	50.2	−.9	76	5	59	27	28	41	31	467	41	79	1.11	−2.2	.35	9	11.9	s.	34	sw.	16	7	11	13	6.0	.0	.0	0
Canton	448	10	61	1,001.7	1,018.3	----	46.3	−1.2	76	6	56	23	28	36	35	584	37	75	1.74	−1.3	.58	10	7.8	sw.	27	w.	6	8	11	12	6.3	T	.0	2
Oswego	335	71	85	1,006.4	1,019.0	+1.4	49.8	−1.4	78	6	58	30	28	42	31	474	40	74	1.25	−2.0	.39	9	9.1	s.	32	n.	28	9	7	15	5.8	.0	.0	0
Rochester	523	5	69	1,000.0	1,019.6	+2.0	49.4	−.1	79	6	60	26	28	39	35	491	40	78	1.17	−1.5	.63	7	9.0	w.	33	w.	6	6	12	13	6.4	T	.0	1
Syracuse [1]	596	5	57	997.0	1,019.3	+1.3	49.6	+.1	79	6	60	27	28	39	37	484	40	80	1.92	−1.2	.83	10	8.7	sw.	28	nw.	19	6	8	17	6.7	T	.0	1
Erie [2]	714	57	81	993.9	1,020.3	+2.7	52.8	−.6	82	5	60	35	28	46	29	390	42	83	3.95	+.3	1.76	12	7.6	sw.	18	w.	28	6	16	9	5.7	.0	.0	1
Cleveland [1]	762	27	54	992.2	1,021.0	+3.0	53.0	+.3	83	6	63	29	16	43	33	383	42	74	.94	−1.8	.55	6	9.9	s.	28	nw.	28	9	13	9	5.3	.0	.0	1
Sandusky	629	5	67	997.3	1,021.0	+3.0	54.0	−.3	84	6	63	32	16	45	32	350	----	----	1.16	−1.3	.63	5	8.5	sw.	20	ne.	14	15	7	9	4.4	.0	.0	0
Toledo [1]	628	5	47	997.3	1,021.0	+3.4	51.8	+.2	84	6	64	28	16	40	38	420	40	75	.91	−1.5	.75	6	10.2	sw.	26	s.	5	17	6	8	4.3	.0	.0	0
Fort Wayne [1]	857	5	33	989.2	1,021.0	----	51.8	−.9	82	6	64	27	16	40	36	419	41	78	1.29	−1.3	.86	5	7.2	nw.	28	nw.	7	19	3	9	3.9	.0	.0	2
Detroit [1]	730	5	78	993.6	1,020.7	+3.1	52.8	+.9	82	6	62	32	15	43	33	388	42	74	.73	−1.6	.55	4	9.1	w.	29	nw.	7	12	10	9	5.0	.0	.0	1
Upper Lakes							48.7	+0.8										79	0.89	−1.8											5.4			
Alpena	609	5	89	996.6	1,019.6	+2.7	47.2	+.1	74	18	56	27	15	39	34	548	39	82	1.57	−1.1	.65	11	9.8	nw.	31	nw.	26	6	11	14	6.3	.0	.0	2
Escanaba	612	51	72	997.3	1,020.3	+4.0	46.3	+.3	69	6	55	26	22	38	31	580	40	81	.75	−1.9	.60	6	11.5	s.	34	n.	28	10	8	13	5.8	.0	.0	1
Grand Rapids [3]	707	70	244	994.2	1,021.0	+3.7	51.8	+.6	79	6	62	29	22	42	30	418	40	81	.61	−2.2	.42	4	10.3	s.	29	sw.	7	16	5	10	4.5	.0	.0	1
Lansing [2]	878	5	90	988.2	1,021.0	----	48.7	−1.6	77	5	60	27	22	38	33	507	38	75	.65	−1.8	.23	7	7.4	sw.	20	n.	14	15	7	9	4.4	.0	.0	1
Marquette	734	44	73	991.9	1,020.0	+3.7	48.0	+1.3	77	17	56	32	29	40	31	525	38	74	1.23	−1.5	.46	8	9.2	n.	29	sw.	27	9	7	15	6.2	T	.0	1
Sault Sainte Marie [1]	614	11	52	996.6	1,019.6	+3.3	43.6	+.6	68	17	52	23	29	35	38	658	38	86	1.08	−2.0	.32	12	10.5	n.	32	sw.	12	7	6	18	6.9	T	.0	4
Chicago [1]	673	5	36	996.3	1,021.3	+4.0	53.4	+.9	85	6	64	30	16	43	36	373	42	74	.59	−2.0	.30	4	8.6	s.	25	sw.	23	16	7	8	4.2	.0	.0	0
Green Bay	617	90	123	997.6	1,020.3	+3.7	49.0	+.5	75	5	58	28	22	40	33	497	42	82	.85	−1.7	.66	3	10.5	s.	34	n.	18	11	9	11	5.6	T	.0	1
Milwaukee [1]	681	33	66	995.6	1,021.0	+4.1	51.2	+1.7	78	6	60	30	22	42	35	430	40	74	.29	−2.1	.28	2	11.6	sw.	32	sw.	5	11	11	9	5.1	.0	.0	0
Duluth [2]	1,133	5	47	978.7	1,021.0	+5.1	47.4	+3.3	74	16	57	27	10	38	35	576	36	80	.46	−1.8	.37	3	11.9	w.	33	nw.	7	12	8	11	5.4	.0	.0	0
North Dakota							49.3	+5.8										66	0.06	−1.1											4.0			
Fargo [1]	940	5	43	985.8	1,021.0	+5.1	47.8	+3.3	78	17	61	22	19	34	40	533	38	78	.17	−1.5	.16	3	10.7	s.	37	nw.	6	14	10	7	4.4	.0	.0	0
Bismarck [1]	1,677	5	43	959.7	1,021.3	+5.7	50.1	+6.5	82	27	66	21	21	34	49	463	34	65	.08	−.9	.05	2	8.7	se.	38	nw.	6	15	10	6	3.9	T	.0	1
Devils Lake	1,478	11	44	966.5	1,021.0	+5.4	48.4	+6.0	78	27	62	19	21	34	39	522	33	64	.01	−1.2	.01	1	8.1	s.	35	nw.	24	14	14	3	4.0	.0	.0	0
Grand Forks [1]	832	4	41	989.8	1,021.0	----	45.7	----	80	27	59	19	21	32	47	599	34	----	.09	----	.07	2	----	s.	----	----	----	17	10	4	----	.0	.0	0
Lemmon, S. Dak.	2,602	6	30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Williston	1,878	42	50	952.3	1,019.3	+4.1	50.8	+7.4	77	27	66	20	1	36	45	441	34	59	T	−.9	T	0	5.7	se.	26	w.	5	15	12	4	3.9	.0	.0	0
Upper Mississippi							54.7	+1.8										72	0.89	−1.6											3.9			
Minneapolis-St. Paul [1]	919	43	74	986.5	1,020.3	+4.0	51.2	+2.3	76	31	62	27	10	40	34	431	38	68	.26	−1.8	.19	4	9.5	nw.	33	w.	6	16	5	10	4.5	.0	.0	0
Springfield, Minn.	1,025	4	42	983.4	1,021.0	----	51.0	----	77	31	64	27	22	38	42	437	38	69	.35	----	.34	3	----	nw.	----	----	----	17	8	6	----	.0	.0	0
La Crosse [1]	714	5	29	994.6	1,021.3	+4.7	50.2	+1.1	76	18	62	24	22	38	36	460	40	78	.37	−2.0	.33	4	7.8	s.	25	w.	6	14	6	11	4.8	.0	.0	1
Madison [2]	974	70	78	995.1	1,021.3	+4.4	51.2	+.9	74	5	60	35	15	42	29	431	38	72	.24	−2.2	.13	3	7.7	sw.	28	ne.	18	15	7	9	4.3	.0	.0	1
Charles City	1,015	10	51	984.8	1,022.4	+5.8	51.2	+2.6	75	31	63	28	22	40	36	432	----	----	.62	−1.7	.35	5	5.4	nw.	17	nw.	7	20	2	9	3.6	.0	.0	0
Davenport [1]	606	6	50	999.0	1,021.7	+4.4	53.4	+1.4	78	18	65	28	16	42	40	362	42	75	1.06	−1.3	.73	4	8.1	sw.	26	nw.	7	16	5	10	4.4	.0	.0	1
Des Moines [3]	860	5	99	989.5	1,021.0	+4.1	55.8	+2.4	80	31	67	30	22	44	40	284	41	68	.61	−1.9	.32	6	7.9	n.	24	nw.	7	18	8	5	3.3	.0	.0	1
Dubuque	699	60	79	995.6	1,021.3	+4.0	53.1	+1.2	75	6	64	31	16	42	35	370	41	70	.84	−1.6	.54	5	4.7	nw.	17	nw.	7	15	7	9	4.4	.0	.0	1
Burlington [1]	702	4	36	995.6	1,021.7	+4.1	54.4	+.6	80	6	66	30	12	42	35	330	43	76	2.86	+.2	2.25	5	9.0	nw.	26	nw.	7	13	9	9	4.8	.0	.0	3
Cairo	357	5	99	1,008.1	1,021.7	+3.4	61.6	+1.1	88	6	73	39	28	50	36	165	----	----	.63	−2.1	.51	3	6.7	n.	21	sw.	5	21	4	6	3.0	.0	.0	2
Peoria [1]	609	6	26	999.3	1,022.0	+4.4	54.4	+3.4	83	6	66	31	12	43	35	338	42	74	1.23	−1.1	1.21	3	8.1	sw.	27	sw.	23	19	4	8	3.3	.0	.0	2
Springfield, Ill. [3]	636	5	191	998.0	1,021.7	+4.1	58.4	+2.6	87	6	69	39	16	48	30	228	44	80	1.22	−1.3	1.05	3	10.0	s.	29	sw.	23	18	6	7	3.8	T	.0	1
St. Louis [2]	568	35	303	1,000.7	1,021.7	+3.7	61.1	+2.3	88	6	71	43	12	51	30	173	43	65	.78	−1.9	.66	4	9.7	nw.	27	sw.	31	20	8	3	2.9	.0	.0	3
Missouri Valley							57.1	+3.2										70	1.23	−1.0											3.6			
Columbia, Mo. [1]	784	6	66	992.6	1,021.7	+4.1	59.4	+2.5	88	6	72	32	12	47	37	203	46	71	1.14	−1.5	.87	3	6.0	e.	20	sw.	23	18	7	6	3.3	.0	.0	3
Kansas City [1]	963	39	76	985.8	1,021.0	+3.7	61.2	+3.5	85	29	72	38	12	50	37	145	45	66	1.03	−1.7	.71	4	8.0	sw.	36	sw.	4	19	6	6	3.5	.0	.0	2
St. Joseph [2]	967	11	49	985.8	1,021.0	----	60.0	+4.0	84	29	71	34	12	49	35	172	46	72	1.58	−1.3	.93	8	6.8	s.	25	s.	4	21	5	5	2.8	.0	.0	4
Springfield, Mo. [1]	1,324	5	67	973.9	1,021.3	+3.7	60.0	+2.4	87	6	73	34	12	47	37	193	48	75	3.16	+1.2	2.80	6	7.7	s.	46	nw.	2	21	6	4	2.9	.0	.0	4
Topeka	987	65	87	985.1	1,021.0	----	60.8	+3.8	84	29	73	37	12	49	38	149	46	70	2.33	−1.1	1.56	4	7.0	n.	24	sw.	5	18	7	6	3.6	.0	.0	2
Lincoln [3]	1,189	11	81	978.0	1,021.3	+4.4	57.4	+3.2	82	23	69	34	10	45	37	243	42	71	1.17	−.7	.62	4	7.5	n.	22	nw.	18	19	6	6	3.6	.0	.0	2
Omaha [1]	1,105	5	68	981.0	1,021.3	+4.4	56.8	+3.4	83	28	69	33	10	44	37	258	44	72	.85	−1.3	.29	5	8.9	n.	29	nw.	6	17	8	6	4.0	.0	.0	1
Valentine	2,598	46	54	929.2	1,021.7	+4.4	51.6	+2.3	84	5	68	22	19	35	50	420	34	60	.16	−.9	.11	3	7.3	w.	27	nw.	5	17	6	8	4.3	.0	.0	0
Sioux City [1]	1,138	5	40	979.3	1,021.0	+4.4	53.6	+3.9	81	31	67	29	12	40	46	352	40	72	.27	−1.5	.14	3	8.1	e.	27	s.	22	16	8	7	4.1	.0	.0	0
Huron [1]	1,301	5	41	973.9	1,021.7	+5.4	50.2	+2.5	81	24	66	22	19	34	50	454	39	75	.61	−.7	.57	3	9.5	se.	34	s.	22	16	10	5	3.9	T	.0	0

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder storms
	Ft.	*Ft.*	*Ft.*	*Mbs.*	*Mbs.*	*Mbs.*	*°F*	*°F*	*°F*		*°F*	*°F*		*°F*	*°F*		*°F*	*%*	*In.*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
Northern Slope							51.3	+5.8										58	0.27	−0.7											4.4			
Billings[1]	3,570	16	40	895.7	1,020.0	.....	54.2	+6.2	79	4	68	29	1	41	40	336	32	47	.63	.....	.03	1	10.0	sw.	30	nw.	5	14	7	10	4.5	T	.0	0
Havre	2,507	11	67	929.9	1,019.6	+4.4	52.0	+7.5	80	4	70	22	1	34	50	408	32	54	.05	−.6	.04	2	7.0	w.	34	sw.	23	10	15	6	4.9	.0	.0	0
Helena	4,124	5	43	878.4	1,021.3	+4.4	48.8	+5.0	79	4	65	20	1	32	44	505	33	60	.04	−.6	.02	2	5.5	w.	34	w.	5	14	7	10	4.7	.0	.0	0
Missoula[2]	3,205	80	91	906.9	1,021.7	.....	51.0	+6.0	77	4	65	30	1	37	37	434	36	68	.38	−.8	.20	3	4.9	se.	24	nw.	4	12	9	10	4.9	.0	.0	0
Kalispell	2,973	48	56	916.4	1,020.0	+3.7	49.2	+5.7	71	4	62	29	30	36	34	487	36	66	.10	−1.0	.06	3	5.3	nw.	18	sw.	23	13	10	8	4.6	.0	.0	0
Miles City[1]	2,371	5	78	935.7	1,020.7	+4.8	53.4	.....	79	4	69	28	11	38	42	361	35	58	T	.....	T	0	.....	se.	.....	.....	.....	14	6	11	4.5	T	.0	0
Rapid City[1]	3,259	5	63	906.9	1,021.7	+5.4	52.6	+5.0	82	5	67	26	19	38	41	384	33	58	.92	.0	.51	3	11.3	s.	43	nw.	18	16	9	6	3.8	1.0	.0	1
Cheyenne[1]	6,094	5	40	818.5	1,020.7	+4.4	49.6	+4.8	78	12	65	22	19	34	43	478	30	53	.06	−.9	.03	3	9.2	w.	37	nw.	5	10	16	5	4.8	.0	.0	2
Lander	5,352	60	68	840.8	1,021.7	+4.4	48.2	+4.7	74	9	63	21	2	34	39	521	34	64	.48	−.9	.20	4	3.6	sw.	24	sw.	31	19	5	7	3.5	4.0	.0	3
Sheridan[1]	3,790	5	38	889.3	1,020.7	.....	53.5	+8.9	81	12	71	26	2	36	47	356	30	49	.08	−1.0	.05	2	5.9	nw.	49	nw.	17	18	7	6	3.6	T	.0	0
North Platte[1]	2,821	11	51	921.8	1,021.3	+4.7	54.2	+4.5	86	13	69	30	20	39	49	333	36	65	.30	−.8	.21	4	6.0	n.	19	n.	18	15	9	7	4.6	.0	.0	0
Middle Slope							59.3	+2.7										65	1.66	−0.3											4.1			
Denver[2]	5,292	106	113	843.2	1,020.7	+4.4	55.2	+4.0	82	5	68	33	19	43	37	306	32	50	.05	−1.0	.03	3	6.2	s.	23	ne.	9	17	9	5	3.9	.0	.0	1
Pueblo[1]	4,690	5	36	862.2	1,021.3	+5.7	54.3	+3.1	86	9	71	28	22	38	32	333	34	56	.32	−.3	.15	6	6.6	nw.	26	nw.	9	12	10	9	5.0	.0	.0	1
Concordia	1,392	50	58	971.2	1,021.7	+4.8	58.4	+2.5	82	31	70	36	12	46	39	209	44	70	1.57	−.4	1.17	4	6.5	sw.	20	sw.	30	17	8	6	3.8	.0	.0	1
Dodge City[1]	2,509	5	58	932.6	1,021.0	+4.4	57.7	+1.6	84	24	71	34	12	45	42	231	43	68	1.58	+.3	.81	5	12.4	sw.	32	ne.	6	13	8	10	4.8	.0	.0	0
Wichita[1]	1,358	6	64	972.2	1,020.7	+3.8	60.8	+2.2	84	24	72	38	12	50	37	143	48	69	2.20	−.4	1.51	3	11.2	s.	28	s.	30	17	5	9	4.1	.0	.0	2
Oklahoma City[2]	1,214	10	47	977.3	1,020.7	+3.8	64.6	+3.1	88	6	76	39	12	54	30	75	50	68	3.19	+.3	2.21	6	6.2	s.	19	nw.	11	18	7	6	3.5	.0	.0	4
Tulsa[1]	674	10	60	995.9	1,020.3	.....	64.2	+2.6	90	1	77	39	12	52	36	74	51	71	2.70	−.6	1.85	7	8.2	s.	31	n.	11	18	9	4	3.4	.0	.0	6
Southern Slope							64.0	+1.6										68	2.89	+1.0											3.			
Abilene[1]	1,738	4	59	959.0	1,019.6	+3.3	65.8	+1.5	88	2	78	40	12	53	33	52	52	72	3.34	+.8	2.57	3	10.4	s.	26	s.	2	20	7	4	3.6	.0	.0	3
Amarillo[1]	3,676	5	42	894.7	1,020.3	+4.4	58.8	+3.0	81	24	71	38	12	47	37	193	46	70	.84	−.8	.71	5	12.4	sw.	41	se.	15	13	8	10	4.6	.0	.0	3
Del Rio	960	63	71	985.4	1,018.6	+3.4	70.3	+.3	89	7	81	49	23	59	30	4	56	66	6.50	+4.7	6.50	1	7.2	se.	38	w.	3	19	10	2	3.3	.0	.0	2
Roswell	3,566	75	85	897.7	1,019.3	+4.7	61.2	+1.7	87	13	75	39	22	47	41	138	47	66	.89	−.5	.73	4	6.0	s.	24	s.	15	12	12	7	4.8	.0	.0	5
Southern Plateau							69.6	+3.3										50	0.77	0.0											3.			
El Paso[1]	3,778	39	85	889.9	1,015.9	+2.7	65.6	+3.6	90	6	78	45	21	53	42	49	42	46	1.30	+.5	.92	4	9.2	n.	28	e.	26	17	9	5	3.6	.0	.0	4
Albuquerque[1]	5,314	5	45	842.9	1,018.3	.....	58.7	+2.1	82	6	71	38	29	46	35	200	42	60	.86	.0	.33	12	9.2	se.	36	s.	1	12	11	8	4.8	.0	.0	7
Flagstaff	6,907	36	51	794.8	1,020.0	+6.8	50.6	.....	78	6	66	27	17	35	45	445	33	58	.35	−1.1	.23	5	.....	nw.	.....	.....	.....	14	8	9	.....	T	.0	3
Phoenix[1]	1,107	39	87	974.9	1,012.5	+.6	74.9	+4.3	100	9	90	53	3	60	39	0	44	42	.36	−.1	.25	3	6.1	e.	27	se.	23	13	12	6	4.1	.0	.0	2
Tucson[1]	2,555	5	39	926.5	1,013.2	.....	72.8	+4.1	97	9	87	48	3	59	36	2	45	43	1.13	+.6	.48	7	.....	se.	.....	.....	.....	17	7	7	4.0	.0	.0	7
Yuma	142	9	54	1,007.5	1,011.9	+.4	75.8	+2.5	105	10	92	54	16	60	40	0	49	48	.64	+.4	.49	5	4.0	w.	17	e.	23	24	5	2	2.0	.0	.0	5
Middle Plateau							54.8	+4.7										53	0.32	−0.5											3.3			
Reno[1]	4,527	20	52	864.9	1,018.0	+2.4	52.8	+4.3	84	3	74	26	26	32	54	380	34	58	.64	+.3	.46	5	5.6	w.	40	s.	31	21	7	3	3.1	.0	.0	2
Tonopah	6,090	9	20	817.1	1,016.9	.....	55.8	+3.7	76	4	66	34	1	46	25	284	27	35	.02	−.3	.02	1	.....	se.	.....	.....	.....	22	8	1	.....	.0	.0	0
Winnemucca	4,339	5	56	870.6	1,018.0	+.4	54.1	+5.8	85	7	73	27	2	35	49	336	32	49	.13	−.5	.06	4	7.4	ne.	26	sw.	31	21	2	8	3.3	.0	.0	2
Modena	5,473	10	46	837.1	1,017.3	+2.7	51.2	+3.2	80	7	70	27	20	33	47	429	.....	.....	.14	−.6	.10	4	8.3	w.	28	sw.	8	21	8	2	2.6	.0	.0	1
Salt Lake City[1]	4,227	32	58	871.0	1,019.0	+2.7	56.2	+5.4	85	8	70	36	25	42	37	281	38	56	.18	−1.1	.17	3	7.6	se.	25	s.	31	18	10	3	3.4	.0	.0	4
Grand Junction	4,602	60	68	863.9	1,018.6	+3.0	58.6	+5.8	82	10	71	36	30	46	33	207	37	49	.50	−.4	.29	8	6.0	se.	25	se.	14	16	7	8	4.1	.0	.0	4
Northern Plateau							56.0	+6.8										56	0.36	−0.8											4.4			
Baker[2]	3,471	36	54	899.1	1,019.6	+1.0	54.0	+7.4	81	11	71	27	6	37	45	342	32	60	.30	−.6	.12	4	6.1	se.	22	sw.	31	15	9	7	4.2	.0	.0	2
Boise[1]	2,739	5	49	922.8	1,018.0	.0	58.0	+7.9	82	12	72	34	6	44	39	222	36	46	.43	−.8	.39	5	8.8	se.	26	nw.	1	13	13	5	4.3	.0	.0	1
Pocatello[1]	4,478	5	31	866.9	1,020.3	+3.0	52.1	+5.6	83	8	70	24	26	34	51	398	32	52	.27	−1.4	.26	2	6.2	s.	30	w.	4	16	11	4	3.6	.0	.0	1
Spokane[1]	1,929	27	42	950.2	1,019.0	+1.0	54.2	+5.9	77	11	69	33	6	40	38	331	41	64	.45	−.7	.22	6	5.1	ne.	24	ne.	10	15	7	9	4.5	.0	.0	0
Walla Walla	991	57	65	982.7	1,018.3	.0	59.2	+5.7	79	23	70	39	6	48	31	186	.....	.....	.57	−1.0	.38	4	4.3	sw.	16	se.	30	11	11	9	4.8	.0	.0	1
Yakima	1,076	88	67	979.3	1,017.6	.....	58.8	+8.6	81	11	72	39	6	46	34	191	.....	.....	.12	−.5	.08	2	4.9	nw.	19	nw.	8	15	5	11	4.9	.0	.0	0
North Pacific Coast							57.6	+5.0										80	3.26	−0.5											6.5			
North Head	211	5	55	1,009.8	1,016.9	−.7	57.2	+4.3	80	10	63	47	31	52	26	245	53	88	3.89	−1.1	1.73	11	10.8	s.	43	s.	30	6	7	18	7.1	.0	.0	1
Seattle[1]	125	90	321	1,013.2	1,017.6	.0	57.5	+3.8	74	7	64	45	26	50	28	231	50	82	1.84	−1.0	.52	8	7.3	s.	30	sw.	4	6	10	15	6.5	.0	.0	1
Tacoma	194	172	201	1,010.8	1,017.3	.0	55.8	+5.3	75	7	62	41	26	49	30	286	.....	.....	2.39	−.9	.72	9	6.0	n.	29	n.	10	6	10	15	6.4	.0	.0	0
Tatoosh Island	86	9	61	1,013.5	1,016.3	.0	54.8	+4.9	74	10	59	46	15	50	22	316	51	88	10.26	+2.1	5.33	14	16.6	e.	53	s.	23	5	8	18	7.2	.0	.0	2
Medford[1]	1,329	29	58	969.9	1,016.9	.....	58.8	+5.2	83	7	74	38	18	44	45	189	46	68	1.54	+.1	.59	6	.....	s.	.....	.....	.....	8	10	13	5.6	.0	.0	2
Portland, Oreg.[1]	154	68	106	1,011.9	1,017.3	−.7	60.2	+6.0	78	10	68	46	26	52	26	155	52	80	1.47	−1.6	1.04	6	5.4	nw.	20	ne.	10	7	13	11	6.1	.0	.0	0
Roseburg	510	45	76	999.0	1,017.3	−1.3	59.2	+5.3	82	18	72	39	6	46	39	185	49	74	1.44	−1.2	.67	7	2.5	nw.	20	sw.	31	6	11	14	6.3	.0	.0	2
Middle Pacific Coast							62.4	+2.0										70	1.97	+0.5											4.2			
Eureka	60	72	88	1,016.3	1,018.0	.0	55.4	+1.8	77	28	62	43	25	49	31	301	51	88	2.79	+.5	2.38	6	4.9	n.	23	s.	29	7	12	12	6.3	.0	.0	2
Red Bluff[1]	.....	6	26	1,003.1	1,015.2	−1.7	66.8	+2.5	90	6	81	47	18	52	41	30	42	47	.57	.....	.41	4	7.4	nw.	35	se.	30	18	8	5	3.5	.0	.0	0
Sacramento	66	92	115	1,013.5	1,015.6	.0	65.8	+2.9	87	24	78	50	14	53	34	31	48	62	1.39	+.5	1.16	4	5.6	s.	18	s.	31	24	5	2	2.1	.0	.0	1
San Francisco[2]	155	112	132	1,011.2	1,016.3	.0	61.4	+.9	82	24	68	50	3	55	25	127	52	82	1.70	+.6	1.09	4	7.0	w.	24	sw.	31	10	12	9	5.0	.0	.0	1
South Pacific Coast							65.3	+1.4										71	0.32	−0.3											3.7			
Fresno[1]	327	5	34	1,003.7	1,014.9	+.3	66.4	+4.1	89	19	81	47	11	52	40	19	48	58	.89	+.3	.84	4	3.8	nw.	17	nw.	10	24	5	2	2.2	.0	.0	1
Los Angeles	338	223	250	1,004.4	1,015.9	+1.7	64.8	−.5	83	23	74	51	11	55	29	34	54	76	.06	−.6	.05	2	5.3	w.	17	nw.	2	16	13	2	3.8	.0	.0	0
San Diego[1]	87	20	55	1,013.2	1,015.6	+1.4	64.6	+.5	78	3	71	52	12	58	22	25	57	79	T	−.5	T	0	6.2	w.	17	w.	8	11	13	7	5.0	.0	.0	0
West Indies																																		
San Juan, P. R.	82	10	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder storms
Panama Canal	*Ft.*	*Ft.*	*Ft.*	*Mbs.*	*Mbs.*	*Mbs.*	°F	°F	°F		°F	°F		°F	°F		°F	%	*In.*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
Balboa Heights	118	6	92	-------	[2]1,009.8	.0	78.8	−.9	91	2	85	70	14	72	17	0	[3]74	[3]90	11.29	+1.2	3.03	24	5.4	nw.	25	nw.	22	0	12	19	7.8	.0	.0	3
Cristobal	27	47	97	-------	[2]1,009.8	−.4	80.4	−.3	90	19	86	73	29	75	15	0	[3]74	[3]84	20.15	+4.3	3.07	24	6.7	s.	27	nw.	22	0	5	26	8.5	.0	.0	6
Alaska																																		
Anchorage [1]	132	6	44	997.6	1,002.7	-----	36.8	+.8	55	10	44	10	26	30	30	873	30	70	1.20	−1.0	.40	12	6.4	n.	34	sw.	18	4	6	21	7.6	T	.0	0
Fairbanks [1]	455	5	63	998.5	1,005.8	-----	29.0	+2.3	55	10	37	−1	26	21	27	114	24	80	.69	−.2	.38	10	6.0	e.	26	w.	23	3	5	23	7.7	6.2	1.4	0
Juneau [1]	80	6	32	1006.4	1,009.5	-----	44.8	-----	61	10	49	27	20	40	19	624	42	88	12.39	-----	2.61	28	9.3	se.	45	se.	9	0	3	28	9.4	.0	.0	0
Nome	22	25	56	1004.4	1,004.7	-----	30.0	+.6	45	1	35	10	26	24	20	038	26	78	1.81	+.2	.83	9	10.7	n.	42	s.	22	4	10	17	6.8	1.5	T	0
Hawaii																																		
Honolulu	38	86	100	1,014.6	1,015.2	-----	76.5	−.3	83	1	81	69	12	72	12	0	-----	-----	1.17	−.4	.40	13	9.7	ne.	24	ne.	27	8	15	8	5.7	.0	.0	0

[1] Data are airport records.
[2] Barometric data (adjusted to old city elevation) and hygrometric data from airport; otherwise city office records.
[3] Observations taken bihourly.
[4] Pressure (adjusted to old city elevation), temperature, and hygrometric data from airport; otherwise city office records.
[5] Temperature and precipitation from city records, other data from airport.

NOTE.—Except as indicated by notes 1, 2, 4, and 5 data in table are city office records.

SEVERE LOCAL STORMS, OCTOBER 1944

[Compiled by Mary O. Souder]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
	October						
Williamstown and Lawrence, Kans.	4	3:30 p. m.	[1]4	------	$15,000	Tornadic winds	Property damaged, $10,000; loss in crops, $5,000; path 13 miles long.
Florida, vicinity of Wauchula and Arcadia and in southeastern Polk County.	18	----------	----------	------	----------	Tornadoes	These tornadoes preceded the hurricane on 18–19. No other details.
Florida	18–19	----------	----------	18	60,000,000	Hurricane	This storm had its formation in the western Caribbean. Storm warnings were ordered for the Florida Keys on the morning of the 16th and hurricane warnings from Miami to Tampa on the morning of the 18th and later extended to Cedar Keys and Fernandina and thence up the Atlantic coast. The storm was preceded by several tornadoes on the afternoon of the 18th near Wauchula and Arcadia and in southeastern Polk county. The hurricane was very large with its central core or area of light, shifting winds from 40 to 60 miles in diameter, requiring from 2 to 4 hours to pass over towns directly in its path. Dangerous winds extended fully 200 miles to the right or east of the center, and about 100 miles to the left or west, thus affecting all Peninsular Florida. Winds of hurricane or near hurricane velocity surrounded the central core, with gusts up to 100 miles at Tampa and Orlando. Property damage in the State totaled probably 10 to 13 millions. The greatest loss was to truck and citrus. The Florida State Marketing Bureau estimated total crop losses of nearly $50,000,000. 24 persons injured sufficiently to receive hospitalization. Systematic evacuation of all dangerously exposed beaches doubtless saved many lives.
Cherokee and Crawford Counties, Kans.	20	7:30 p. m.	[1]4–5	------	2,000	Heavy hail	Loss in crops; path 25 miles long.

LATE REPORTS

	August						
Dawson County, Mont.	1	9–10 a. m.	[1]2	------	3,000	Moderate to heavy hail.	Principal loss in wheat and barley; some property damage; path 8 to 1 miles long.
Roosevelt and Richland Counties, Mont.	1	3:30–11:30 p.m.	[1]3	------	300,000	Heavy hail	Loss in wheat, barley, and flax; path 45 miles lon.
Golden Valley County, Mont.	1	6 p. m.	----------	------	8,000	Moderate hail	Loss in wheat and oats.
Richland County, Mont.	1	7–9:15 p. m.	[1]4–6	------	200,000	Heavy hail	Chief loss in crops; some buildings damaged; cattle and chickens killed; path 100 miles long.
Golden Valley and Yellowstone Counties, Mont.	1	9 p. m.	[1]8	------	351,250	----do	Loss in cereals and hay, $350,000; property damage, $1,250; path 35 miles long.
Musselshell County, Mont.	1	9–10 p. m.	[1]6	------	410,000	----do	Chief loss in wheat, $400,000; property damage, $10,000; path 36 miles long.
Rosebud and Treasure Counties, Mont.	1	11–12 p. m.	[1]2–3	------	500,000	Heavy hail and wind.	Loss in crops and alfalfa, $498,500; property damage, $1,500; path 50 to 60 miles long.
Fallon County Mont.	1	p. m.	----------	------	50,000	Heavy hail	Loss in wheat, barley and oats.
Stillwater County, Mont.	1	"----do	[1]10	------	125,000	----do	Loss in wheat and grass; windows broken; path 30 miles long.
Chouteau County, Mont.	2	7 p. m.	[1]1¼	------	15,000	Moderate hail	Loss chiefly in wheat, barley, and oats; path 5 miles long.
Rosebud County, Mont.	2–3	10 p. m. during night a. m.	[1]5	------	15,000	Moderate to heavy hail.	Loss in grains and gardens; path 15 miles long.
Blaine County, Mont.	3	1:30–2 p. m.	[1]1½–2	------	8,000	Moderate hail	Loss in wheat, oats, barley, and flax; path 4 miles long.
Carbon County, Mont.	3	4 p. m.	880	------	10,000	----do	Loss in beans and alfalfa; path 3 miles long.

[1] Miles instead of yards.

SEVERE LOCAL STORMS, OCTOBER 1944—Continued

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Blaine County, Mont.	3	7:30 p. m.	[1] 3		30,000	Light to heavy hail.	Loss in wheat, beets, and barley; path 45 miles long.
Big Horn County, Mont.	3	8 p. m.	[1] 2		10,000	Moderate hail.	Loss in sugar beets, oats, and barley; path 2 miles long.
Fergus County, Mont.	3	9:30 p. m.	[1] 8-10		125,000	Light to heavy hail.	Loss in wheat and barley; path 20 miles long.
Daniels County, Mont.	6	9-12 p. m.	[1] 30		50,000	Wind and hail.	Wind damage, $20,000, included in the estimate; path 30 miles long.
Valley County, Mont.	6		2,640		18,000	Moderate hail.	Loss mostly in barley and wheat; path 3 miles long.
Roosevelt and Sheridan Counties, Mont.	6-7		[1] 2-3		6,500	Light to heavy hail.	Property damage, $1,000; loss in wheat, barley, and oats, $5,500; path 10 to 15 miles long.
Hill and Chouteau Counties, Mont.	7	5:30 p. m.	[1] 4-6		25,000	Heavy hail.	Loss in wheat, mustard, barley, and gardens; path from 35 to 40 miles long.
Toole County, Mont.	7	10:30 p. m.	[1] ¼-4		200,000	do.	Loss in wheat, mustard, and barley; windows broken; path 30 miles long.
Valley County, Mont.	8	4:30-6:30 p. m.	[1] 3-7		45,000	Light to heavy hail.	Loss in wheat, oats, barley, and flax; path 12 miles long.
Fergus County, Mont.	8	6 p. m.	[1] 12		300,000	Heavy hail.	Loss in wheat; some property damage.
Garfield County, Mont.	8	6 p. m.	[1] 5		50,000	Wind and heavy hail.	Loss in crops.
Fergus County, Mont.	8	9 p. m.	[1] 10		150,000	Heavy hail.	Loss in wheat and barley; path 40 miles long.
Judith Basin County, Mont.	8	do.	[1] 3		10,000	Moderate hail.	Loss in wheat and barley; path 25 miles long.
Cascade County, Mont.	8	p. m.			2,000,000	Heavy hail.	Loss mostly in wheat.
Pondera County, Mont.	8	do.	[1] 1		2,000	Light hail.	Loss in barley and oats; path 4 miles long.
Valley County, Mont.	8	do.	2,640		5,000	Moderate hail.	Loss in barley and wheat; path 2½ miles long.
Chouteau County, Mont.	8		[1] 4		600,000	Heavy hail.	Loss in wheat, oats, and barley; path 35 miles long.
Daniels County, Mont.	8		[1] 7		5,000	Wind and hail.	Loss in wheat and barley from wind; path 20 miles long.
Glacier and Toole Counties, Mont.	8		[1] 7		2,800	Heavy hail.	Loss in wheat; path 18 miles long.
Wibaux County, Mont.	9	5-6 p. m.	[1] 5		10,000	do.	Loss in wheat and flax; some windows broken; path 10 miles long.
Custer County, Mont.	9	6 p. m.	[1] 3-4		5,000	do.	Loss in garden crops, grain and corn; path 10 to 12 miles long.
McCone County, Mont.	9	7 p. m.	[1] 15		1,510,000	do.	Loss in all crops.
Sheridan County, Mont.	9	7 p. m.	[1] 15		50,000	Light to heavy hail.	Loss in small grains; little property damage; path 35 miles long.
Dawson County, Mont.	9	7-8 p. m.	[1] 20		420,000	Heavy hail.	Loss in crops, $400,000; property damage, 420,000; path 100 miles long.
Richland County, Mont.	9	7:30 p. m.	[1] 20		2,530,000	Wind and heavy hail.	Loss principally in wheat, grain, and wild hay, $2,500,000; property damage, $30,000; path 35 miles long.
Roosevelt and Sheridan Counties, Mont.	9	7:30-8:30 p. m.	[1] 4-8		19,000	Wind and hail.	Loss in wheat, barley, and oats, $14,000; property damage from wind, $5,000 path 30 miles long.
Valley County, Mont.	9		[1] 4		80,000	Heavy hail.	Loss in wheat and barley; 5 cattle killed; path 14 miles long.
Ravalli, County, Mont.	9-10	9 p. m.-3 a. m.	[1] 2		5,000	Hail.	Loss in apples, wheat, and barley; path 12 miles long.
San Antonio-St. Joseph, Fla.	15	4:15 p. m., E. W. T.		0		Tornado.	The small tornado moved north from San Antonio to St. Joseph, passing over a chicken farm near St. Joseph during minor damage to hen houses and killing 10 chickens.
Choteau County, Mont.	18	5 p. m.			20,000	Light to moderate hail.	Loss in wheat, oats, and barley; path 7 to 8 miles long.
Dawson County, Mont.	21	4-5 p. m.	[1] 2		500	Light hail.	Loss in wheat; path 15 miles long.
Roosevelt County, Mont.	21	4:30 p. m.	[1] 1		25,000	Light to heavy hail.	Loss in wheat, barley, and flax; path 5 miles long.
Toole County, Mont.	22	1 p. m.	[1] 4		20,000	Heavy hail.	Loss in oats, wheat, barley, and hail.
Chouteau County, Mont.	22	8 p. m.	[1] 3		22,000	Light to heavy hail.	Loss in wheat, oats, and barley, $20,000; property damage, $2,000; path 20 miles long.
Blaine County, Mont.	22	9 p. m.	[1] 3		35,000	Heavy hail, electrical.	Loss in wheat and barley; barn struck by lightning and burned; cattle killed; path 12 miles long.
Roosevelt County, Mont.	22		[1] 1		15,000	Moderate hail.	Loss in wheat, barley, and flax; path 3 miles long.
Judith Basin and Fergus Counties, Mont.	24	P. m.	[1] 2		45,000	Light to heavy hail.	Loss in wheat and barley, $30,000; windows broken, automobiles damaged; chickens, calves, and sheep killed; $15,000; path 20 miles long.
Glacier County, Mont.	24		[1] 2		50,000	Heavy hail.	Loss in wheat, flax, and mustard; path 8 miles long.
Judith Basin County, Mont.	24		[1] 5		5,000	Moderate hail.	Loss in wheat; slight property damage; path 15 miles long.
Fergus County, Mont.	25		[1] 4		20,000	Heavy hail.	Loss in wheat and barley; path 10 miles long.
Teton County, Mont.	26	3 p. m.	[1] 8		6,000	Light to moderate hail.	Loss in peas, wheat, and mustard; path 10 miles long.
Fergus County, Mont.	28	4 p. m.	880		2,000	Light hail.	Loss in wheat; path 1 mile long.
Chouteau County, Mont.	28	5 p. m.	[1] 1		5,000	do.	Loss in wheat, oats, and barley; path 5 miles long.

[1] Miles instead of yards

SOLAR RADIATION AND SUNSPOT DATA FOR OCTOBER 1944

[Solar Radiation Investigations Section, I. F. Hand, in charge]

SOLAR RADIATION OBSERVATIONS

EXPLANATIONS of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the January 1944 REVIEW, page 43. A list of the pyrheliometric stations also is given on page 45 of the same REVIEW.

TABLE 1.—*Solar radiation intensities during October 1944*

GRAM-CALORIES PER MINUTE PER SQUARE CENTIMETER OF NORMAL SURFACE

Madison, Wis.

Date	Sun's zenith distance: 7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	75th mer. time	Air mass: A. M.				*1.0	P. M.				Local mean solar time
	e	5.0	4.0	3.0	2.0		2.0	3.0	4.0	5.0	e
	mb.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
Oct. 6	13.6	0.45	0.54	0.70	0.94	1.06	------	------	------	------	17.0
Oct. 7	8.4	.91	.92	1.06	1.16	------	------	------	------	------	9.1
Oct. 11	5.1	.73	.87	.96	1.26	1.54	1.21	------	------	------	4.6
Oct. 12	5.6	.71	.92	1.03	1.19	1.52	------	------	------	------	6.4
Oct. 13	6.9	.74	.90	1.02	1.22	1.50	------	------	------	------	8.4
Oct. 14	8.4	.77	.92	1.04	1.21	1.50	------	------	------	------	6.4
Oct. 16	5.3	------	.87	1.02	1.21	1.52	------	------	------	------	6.9
Oct. 17	6.4	.69	.77	.73	1.15	1.56	------	------	------	------	6.1
Oct. 18	6.9	------	.49	.62	.81	1.32	------	------	------	------	11.4
Oct. 19	5.6	.58	------	------	1.11	1.44	------	------	------	------	7.4
Oct. 21	6.6	------	------	------	1.21	------	------	------	------	------	6.6
Oct. 24	7.8	------	------	------	.76	------	------	------	------	------	10.6
Oct. 25	5.8	.52	.75	.92	1.16	1.40	------	------	------	------	4.4
Oct. 26	4.8	.75	.88	1.04	1.24	1.48	------	------	------	------	5.1
Oct. 28	6.6	.68	.83	.94	1.21	1.46	------	------	------	------	8.4
Oct. 31	10.6	.36	.44	.69	.91	1.25	------	------	------	------	10.6
Means	------	.66	.78	.91	1.11	1.43	(1.21)	------	------	------	------
Departures	------	−.09	−.11	−.12	−.08	.00	.00	------	------	------	------

Lincoln, Nebr.

Oct. 5	14.2	------	------	------	------	1.43	1.25	1.10	0.94	0.84	15.3
Oct. 6	10.2	------	0.90	1.05	1.20	1.48	1.23	1.10	.97	.84	11.0
Oct. 7	8.1	0.90	1.07	1.18	1.34	1.53	1.32	1.19	1.06	.94	8.1
Oct. 9	4.8	.81	.96	1.11	1.29	1.52	1.29	1.14	1.01	.92	8.4
Oct. 10	5.8	------	.96	1.14	1.34	1.53	1.31	1.16	1.03	.92	6.9
Oct. 12	5.8	.83	.96	1.14	1.29	1.53	1.32	1.12	1.03	.92	6.9
Oct. 13	6.9	.88	1.03	1.16	1.29	1.45	1.23	1.01	.84	.71	9.4
Oct. 14	7.2	.75	.83	.98	1.18	1.44	1.19	1.03	------	------	11.4
Oct. 17	9.1	------	------	------	1.11	------	------	------	------	------	13.2
Oct. 21	10.6	------	------	------	------	------	1.05	.88	.77	.70	8.7
Oct. 23	9.8	.72	.88	1.03	------	------	------	------	------	------	10.6
Oct. 26	6.1	------	------	------	1.13	1.35	1.18	1.03	.90	.73	6.4
Oct. 27	4.6	------	------	.96	1.20	1.44	1.21	1.03	.90	.79	8.4
Oct. 28	8.4	.60	.75	.88	1.11	1.33	1.10	.88	.73	.60	11.0
Oct. 30	9.4	.52	.68	.83	1.01	1.44	1.01	.86	.73	.62	11.4
Oct. 31	7.4	.68	.81	.98	1.16	1.42	1.17	.97	.82	.64	8.4
Means	------	.74	.89	1.04	1.20	1.45	1.20	1.04	.90	.78	------
Departures	------	−.06	−.03	−.04	−.07	−.03	−.04	−.02	−.03	−.04	------

ALBUQUERQUE, N. MEX.

October 1	7.6	------	------	1.01	1.18	1.45	1.36	1.25	1.14	1.08	8.8
October 3	5.6	------	------	------	1.26	------	------	------	------	------	5.8
October 4	5.8	------	------	1.22	1.26	1.48	1.29	1.21	1.09	1.03	5.6
October 6	5.2	1.22	1.26	1.31	------	1.44	1.31	1.20	1.14	1.07	5.0
October 7	5.8	------	------	1.20	1.28	1.53	1.39	1.35	1.32	1.27	7.3
October 8	6.0	1.13	1.17	1.25	1.33	1.37	1.26	1.18	1.13	1.08	7.9
October 9	6.3	------	------	1.05	1.22	1.52	------	------	------	------	8.8
October 12	7.9	------	------	.95	------	------	------	------	------	------	8.2

*Extrapolated.

TABLE 1.—*Solar radiation intensities during October 1944*—Con.

ALBUQUERQUE, N. MEX.—Continued

Date	Sun's zenith distance: 7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	75th mer. time	Air mass: A. M.				*1.0	P. M.				Local mean solar time
	e	5.0	4.0	3.0	2.0		2.0	3.0	4.0	5.0	e
	mb.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
October 13	6.8	------	------	.73	1.08	1.29	------	------	------	------	8.8
October 14	7.3	------	.97	------	1.20	1.35	------	------	------	------	8.8
October 15	7.0	1.06	------	1.15	1.25	------	------	------	------	------	9.1
October 16	9.5	------	------	------	------	------	------	1.19	1.13	1.06	8.5
October 18	7.6	------	.97	1.06	1.23	1.33	------	------	------	------	7.9
October 20	6.3	.88	.98	1.10	1.28	1.39	1.32	1.31	1.22	1.22	7.3
October 21	5.8	.72	1.02	1.13	1.23	1.38	1.31	1.24	1.18	1.09	6.5
October 22	6.0	------	.96	------	1.16	------	------	------	------	------	6.3
October 23	6.5	------	------	------	------	1.29	1.26	1.16	1.09	1.02	6.3
October 24	6.0	.82	.92	1.05	1.25	1.28	1.19	1.01	.89	------	6.3
October 29	6.3	------	.61	------	1.02	1.20	1.18	1.10	.99	.90	7.9
October 30	6.3	------	------	1.08	------	------	1.29	1.16	1.07	1.01	7.9
October 31	5.8	------	------	------	1.41	------	------	------	------	1.29	7.3
Means	------	.97	.98	1.19	1.23	1.38	1.29	1.20	1.12	1.09	------
Departures	------	+.04	−.05	+.02	−.05	−.10	−.03	+.01	+.05	+.14	------

BOSTON, MASS.

October 2	9.4	0.63	0.74	0.86	1.07	1.28	------	------	------	------	11.0
October 3	4.8	------	------	------	------	1.33	1.24	1.11	------	------	5.1
October 4	5.8	------	------	------	------	1.24	.87	------	------	------	8.4
October 7	19.6	------	------	.62	.83	------	------	------	------	------	19.6
October 11	14.8	------	------	------	------	------	------	.74	------	------	11.4
October 12	9.4	------	------	.56	1.13	1.36	------	.65	------	------	14.2
October 16	5.6	------	------	------	1.24	1.29	------	------	------	------	6.1
October 17	8.1	------	------	------	1.13	1.35	------	------	------	------	7.4
October 19	10.6	------	------	------	------	1.33	1.16	1.06	0.93	------	5.3
October 23	5.9	------	.87	.98	.98	1.28	1.15	1.04	.83	------	4.4
October 24	7.8	------	------	------	.87	------	.92	.72	.54	0.54	7.4
October 30	4.2	------	.75	1.02	1.14	------	1.17	.95	.84	.75	4.2
October 31	3.7	------	.38	.40	.90	1.09	.77	.76	.56	.52	6.4
Means	------	(.63)	.68	.74	1.03	1.28	1.04	.88	.74	.60	------

BLUE HILL, MASS.

October 1	10.6	------	------	------	------	1.46	1.20	1.16	1.03	0.92	9.4
October 2	9.1	0.70	0.81	0.92	1.17	------	------	1.04	.92	.85	8.7
October 3	4.6	------	------	------	------	1.37	1.34	1.18	1.06	.98	4.2
October 4	4.6	------	------	------	------	------	------	------	.99	.95	6.1
October 7	19.4	------	------	------	.87	------	------	.56	.40	.34	21.1
October 11	14.1	------	------	------	------	------	------	------	.67	.57	9.1
October 12	8.7	.08	.86	1.02	------	------	------	.79	------	.49	9.4
October 15	6.1	1.07	1.16	1.26	------	------	1.39	------	1.15	1.07	5.1
October 16	5.1	1.06	1.15	1.25	1.36	------	------	------	------	------	4.8
October 17	7.5	.92	1.03	1.16	1.31	------	1.31	1.09	1.00	.93	6.9
October 18	6.9	.92	1.03	------	------	------	1.28	1.08	.95	.85	8.1
October 19	9.1	.47	.59	.75	------	------	1.39	1.27	1.14	1.05	5.6
October 22	4.8	.99	1.10	1.23	1.41	------	1.39	1.25	1.13	1.05	4.2
October 23	4.6	1.03	1.03	1.25	1.40	------	1.38	1.23	1.13	.99	3.5
October 24	7.8	.64	.75	.87	1.11	------	1.15	.98	.86	------	6.9
October 29	5.3	------	------	------	------	------	1.41	1.30	1.18	1.10	3.3
October 30	3.6	1.01	1.05	------	1.40	------	1.35	1.20	1.09	.98	3.3
October 31	5.1	.68	.75	.89	1.03	------	------	------	------	------	6.4
Means	------	.85	.94	1.06	1.23	(1.52)	1.33	1.09	.98	.87	------
Departures	------	−.03	−.02	−.03	.00	+.13	+.11	+.06	+.06	+.06	------

BOSTON/BLUE HILL RATIO ON COMPARABLE DATES

	------	(0.90)	0.75	0.69	0.84	------	0.86	0.83	0.74	(0.77)	------

*Extrapolated.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct+diffuse) received on horizontal surface*

[Gram-calories per square centimeter]

Date 1944	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Ithaca, N. Y.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	East Wareham, Mass.	Davis, Calif.	Boulder, Colo.	Tooele, Utah	Illumination—Boston, Mass.
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*Avg. ft.candles*
Oct. 1	433	120	94	197	474	484	165	198	387	419	329	446	495	414	391	348	228	290	360	512	48	103	3,145
2	284	49	73	131	376	471	28	91	374	427	433	417	528	400	233	390	95	158	437	464	85	534	3,062
3	7	298	57	169	204	472	47	69	405	302	419	438	499	389	424	349	85	270	446	411	380	512	3,163
4	37	143	79	322	131	459	48	189	288	429	411	319	491	439	428	393	90	392	400	429	409	519	2,367
5	64	222	332	172	101	443	151	432	325	144	323	317	478	347	294	216	209	102	234	422	492	502	2,782
6	163	318	439	336	59	444	38	426	36	270	321	436	444	39	188	49	293	405	72	466	428	498	568
7	386	217	453	279	308	237	37	470	327	239	388	337	324	326	222	268	191	427	265	253	443	484	3,135
Mean	**196**	**195**	**218**	**230**	**236**	**430**	**74**	**268**	**306**	**331**	**375**	**387**	**466**	**336**	**311**	**288**	**170**	**305**	**316**	**422**	**326**	**451**	**2,603**
Departure	**−130**	**−83**	**−114**	**−37**	**−67**	**+4**	**−38**			**+23**	**+9**	**+2**	**+77**	**+30**	**+25**	**0**	**−105**	**−21**	**+6**	**−16**			
Oct. 8	415	139	447	130	366	436	62	472	169	453	324	408	425	217	140	215	110	183	135	434	358	483	1,862
9	244	163	425	63	311	447	(25)	364	32	147	375	396	471	60	146	221	99	56	88	438	337	475	412
10	389	215	439	56	310	325	120	408	218	322	363	394	338	217	132	158	135	82	242	425	285	466	2,011
11	322	401	293	192	334	430	40	292	273	202	125	438	457	311	228	309	227	175	314	335	407	202	2,370
12	294	365	416	322	314	416	41	405	313	68	322	213	433	325	336	269	357	375	308	273	389	412	2,672
13	38	378	397	324	58	407	100	425	61	112	305	412	434	85	285	85	160	372	99	402	329	402	630
14	301	387	395	264	144	405	62	361	64	430	163	405	436	62	117	99	228	308	67	414	217	363	670
Mean	**286**	**291**	**402**	**193**	**263**	**416**	**71**	**390**	**161**	**248**	**282**	**381**	**428**	**183**	**198**	**194**	**188**	**221**	**179**	**389**	**332**	**400**	**1,518**
Departure	**−22**	**+38**	**+94**	**−39**	**−29**	**+10**	**−21**			**−38**	**−61**	**−11**	**+52**	**−132**	**−77**	**−122**	**−60**	**−61**	**−90**	**−5**			
Oct. 15	417	364	346	351	414	383	33	416	303	390	264	403	389	303	337	358	427	388	410	428	286	365	2,478
16	404	369	357	304	358	400	38	400	292	389	327	186	413	309	278	317	382	380	338	396	159	312	2,322
17	376	341	355	296	366	406	52	398	329	419	317	260	404	355	374	352	370	363	367	408	400	406	2,752
18	292	275	331	285	298	406	40	364	309	382	331	185	424	333	339	348	299	354	356	403	202	414	2,587
19	265	330	121	328	308	398	75	350	267	297	330	289	419	282	319	292	333	374	281	378	361	411	2,31
20	3	289	103	150	108	310	123	289	160	316	320	147	397	220	118	239	38	129	270	180	373	410	1,459
21	103	319	359	247	28	392	34	190	30	335	287	311	281	383	42	69	76	309	164	366	352	401	387
Mean	**266**	**327**	**282**	**280**	**268**	**385**	**56**	**344**	**242**	**361**	**311**	**254**	**390**	**263**	**258**	**282**	**275**	**328**	**298**	**365**	**305**	**388**	**2,043**
Departure	**−16**	**+99**	**−11**	**+77**	**+2**	**+23**	**−15**			**+88**	**−4**	**−104**	**+43**	**−13**	**+14**	**+3**	**+57**	**+92**	**+63**	**−1**			
Oct. 22	363	347	345	309	390	379	4	367	332	368	297	200	357	357	342	358	387	366	383	395	338	395	2,751
23	377	219	342	188	288	377	9	303	303	374	301	333	216	367	327	339	321	323	366	400	355	404	2,540
24	258	278	332	216	270	353	48	358	231	341	304	287	182	297	60	311	87	279	356	412	341	375	2,029
25	273	328	355	267	222	364	58	351	146	372	305	159	384	189	212	282	262	310	282	395	347	380	1,445
26	282	310	328	95	241	348	35	361	131	352	300	220	377	152	175	143	319	237	177	384	334	385	1,197
27	181	279	338	281	90	343	65	355	158	360	298	281	420	159	184	86	118	281	113	351	345	348	1,456
28	322	305	312	263	359	332	38	330	46	300	234	150	345	63	297	68	237	298	62	336	335	332	478
Mean	**294**	**296**	**336**	**231**	**266**	**356**	**37**	**346**	**192**	**352**	**291**	**233**	**336**	**226**	**228**	**227**	**247**	**299**	**249**	**382**	**342**	**374**	**1,699**
Departure	**+37**	**+83**	**+59**	**+55**	**+34**	**+10**	**−22**			**+106**	**+12**	**−81**	**+1**	**+12**	**+58**	**+2**	**+58**	**+92**	**+37**	**+35**			

ACCUMULATED DEPARTURES ON OCTOBER 28, 1944

	4,715	**−707**	**−8,621**		**−5,361**	**+5,028**				**+4,620**		**−8,038**		**+277**		**−5,216**	**−1,714**	**+2,076**	**+2,721**	**−1,320**			

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1944

By LUCY T. DAY

[Equatorial Division, U. S. Naval Observatory]

[Communicated by Commodore J. F. Hellweg, U. S. N. (Ret.) Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day, under longitude, latitude, area of spot or group, and spot count are included assumed longitude of center of the disk, assumed latitude of center of the disk, total areas of spots and groups and total spot count.

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1944	h m		°	°	°	°				
Oct. 1	10 19	7674	−69	241	−32	74	145	1	G	Mt. Wilson.
		7673	−48	262	−24	56	6	1		
		7672	+25	335	−24	39	24	2		
		7671	+27	337	+23	31	73	13		
		7671	+30	340	+21	32	158	1		
				(310)	(+7)		406	18		
2	11 10	7674	−57	239	−32	65	97	1	VG	U. S. Naval.
		7673	−37	259	−23	47	6	1		
		7673	−35	261	−23	45	16	4		
		7671	+38	334	+23	40	109	21		
		7671	+44	340	+21	45	242	2		
				(296)	(+7)		470	29		
3	10 39	7674	−43	240	−31	56	97	1	G	Mt. Wilson.
		7673	−25	258	−24	39	48	8		
		7673	−19	264	−24	37	16	1		
		7671	+50	333	+26	52	12	2		
		7671	+53	336	+24	54	48	10		
		7672	+53	336	−21	59	6	2		
		7672	+53	336	−23	60	48	10		
		7672	+57	340	−22	62	73	1		
		7671	+59	342	+23	60	242	1		
				(283)	(+7)		590	36		
4	11 0	7674	−30	240	−31	48	97	1	G	Do.
		7673	−7	263	−23	31	6	1		
		7673	−5	265	−23	31	12	2		
		7671	+61	331	+23	61	24	6		
		7671	+67	337	+22	68	12	5		
		7672	+68	338	−25	71	24	3		
		7671	+70	340	+20	69	242	1		
				(270)	(+7)		417	19		
5	10 37	7674	−23	234	−34	46	6	2	G	Do.
		7674	−17	240	−31	41	97	1		
		7673	+7	264	−25	32	6	1		
		7671	+84	341	+20	84	194	1		
				(257)	(+6)		303	5		
6	11 14	7674	−8	235	−34	42	6	1	F	U. S. Naval.
		7674	−5	238	−32	39	97	1		
		7675	+30	273	−23	42	6	1		
		7675	+32	275	−24	44	6	1		
				(243)	(+6)		115	4		
7	10 37	7676	−80	150	+27	80	16	1	F	Do.
		7676	−78	152	+28	78	6	1		
		7674	+9	239	−32	39	85	1		
				(230)	(+6)		107	3		
8	11 5	7676	−67	150	+27	68	12	1	F	Do.
		7674	+22	239	−32	44	12	2		
				(217)	(+6)		24	3		
9	10 54	7676	−56	148	+27	57	6	2	G	Do.
		7674	+34	238	−32	51	73	3		
		7677	+56	260	−12	59	73	3		
		7677	+60	264	−12	63	61	5		
				(204)	(+6)		213	13		
10	10 21	7674	+48	239	−31	61	73	1	G	Do.
		7677	+68	259	−12	70	36	2		
		7677	+72	263	−12	75	109	1		
				(191)	(+6)		218	4		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1944	h m		°	°	°	°				
Oct. 11	10 36	7674	+61	239	−31	70	73	1	F	U. S. Naval.
				(178)	(+6)		73	1		
12	10 30	7674	+75	239	−31	80	48	1	F	Do.
				(164)	(+6)		48	1		
13	10 14	.....	.....	No	spots	.....	.....	.....		†Mt. Wilson.
14	10 33	.....	.....	No	spots	.....	.....	.....	F	U. S. Naval.
15	11 6	7679	−78	47	−23	80	145	1	F	Do.
		7678	−36	89	+19	38	12	1		
				(125)	(+6)		157	2		
16	10 32	7679	−64	48	−23	70	206	1	G	Do.
		7678	−25	87	+20	27	24	7		
		7678	−23	89	+20	26	61	3		
				(112)	(+6)		291	11		
17	11 6	7679	−50	48	−23	57	206	1	G	Do.
		7678	−12	86	+20	18	48	10		
		7678	−9	89	+20	16	48	3		
				(98)	(+6)		302	14		
18	10 45	7679	−37	48	−23	47	194	1	VG	Do.
		7678	+2	87	+19	13	16	5		
		7678	+5	90	+20	15	24	3		
				(85)	(+6)		234	9		
19	11 27	7679	−24	48	−23	37	194	3	G	Do.
		7679	−23	49	−25	38	6	3		
		*	+17	89	−8	22	12	2		
		7678	+18	90	+20	22	6	2		
				(72)	(+6)		218	10		
20	11 6	7679	−11	48	−23	30	170	1	G	Mt. Wilson.
		7680	−9	50	−25	31	48	6		
		7680	−7	52	−23	29	73	1		
				(59)	(+5)		291	8		
21	14 7	7679	+3	47	−24	29	194	1	F	U. S. Naval.
		7680	+4	48	−26	30	48	2		
		7680	+7	51	−25	31	61	2		
				(44)	(+5)		303	5		
22	11 47	7679	+14	46	−25	30	194	1	F	Do.
		7680	+18	50	−27	30	36	2		
		7680	+19	51	−25	35	73	7		
				(32)	(+5)		303	10		
23	10 46	7679	+27	46	−25	30	194	1	F	Do.
		7680	+28	47	−26	41	12	2		
		7680	+31	50	−26	43	24	1		
		7680	+33	52	−25	44	24	1		
				(19)	(+5)		254	5		
24	10 19	7679	+40	46	−25	49	194	1	F	Do.
		7680	+44	50	−26	52	6	1		
				(6)	(+5)		200	2		
25	10 31	7681	−10	343	+18	17	24	6	G	Do.
		7679	+53	46	−25	59	194	1		
		7680	+62	55	−24	67	6	1		
		7680	+64	57	−26	69	6	1		
				(353)	(+5)		230	9		
26	10 34	7679	+66	46	−25	70	194	1	G	Do.
				(340)	(+5)		194	1		
27	10 35	7679	+80	47	−25	80	194	1	F	Do.
				(327)	(+5)		194	1		
28	10 38	7683	−68	245	−6	69	36	3	F	Do.
		7682	−41	272	+19	43	16	4		
				(313)	(+5)		52	7		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1944—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1944	h m		°	°	°	°				
Oct. 29	11 5	7684	−78	222	−7	78	97	1	F	U. S. Naval
		7684	−71	229	−7	72	48	2		
		7683	−55	245	−6	57	6	1		
		7682	−27	273	+19	31	12	3		
				(300)	(+5)		163	7		
30	10 51	7684	−65	222	−6	66	109	1	G	Do.
		7684	−60	227	−7	61	61	2		
		*	−58	229	−32	64	24	12		
		7683	−43	244	−6	44	6	1		
				(287)	(+5)		200	16		
31	11 29	7684	−51	222	−5	53	61	1	G	Mt. Wilson
		7684	−45	228	−7	47	85	2		
		7683	−28	245	−6	31	6	2		
		7682	0	273	+19	15	24	5		
				(273)	(+4)		176	10		

Mean daily area for 31 days = 218

†Data from Mount Wilson charts.
*Not numbered.
VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR AUGUST 1944

[Based on observations at Zurich, except as indicated by an asterisk. Data furnished through the courtesy of Prof. W. Brunner, Swiss Federal Observatory, Zurich, Switzerland]

	Relative numbers		Relative numbers		Relative numbers
Aug. 1	0	Aug. 11	*a* 30	Aug. 21	8
2	0	12	28	22	0
3	7	13	19	23	15
4	0	14	24	24	*Ec* 14
5	*Ec* 10	15	*Mc* 14	25	19
6	*Ec* 20	16	16	26	18
7	22	17	*Mc* 34	27	*a* 14
8	25	18	31	28	21
9	29	19	18	29	18
10	25	20	23	30	16
				31	0

Mean, 31 days=16.7

a=Passage of an average sized group through the central meridian.
b=Passage of a large group through the central meridian.
c=New formation of a group developing into a middle sized or large center of activity; E, on the eastern part of the Sun's disk; W, on the western part; M, in the central circle zone.
d=Entrance of large or average sized center of activity on the east limb.

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, October 1944

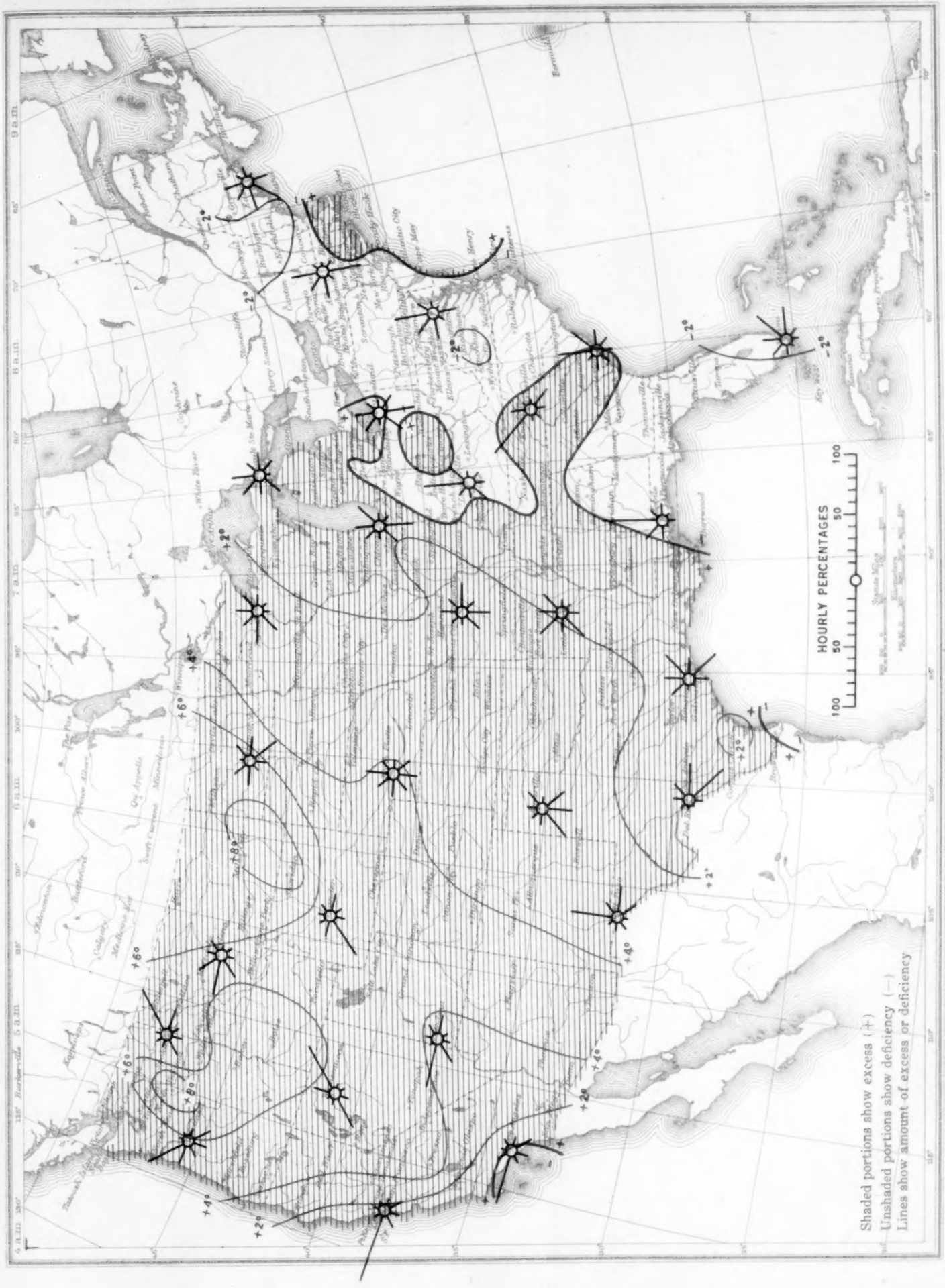
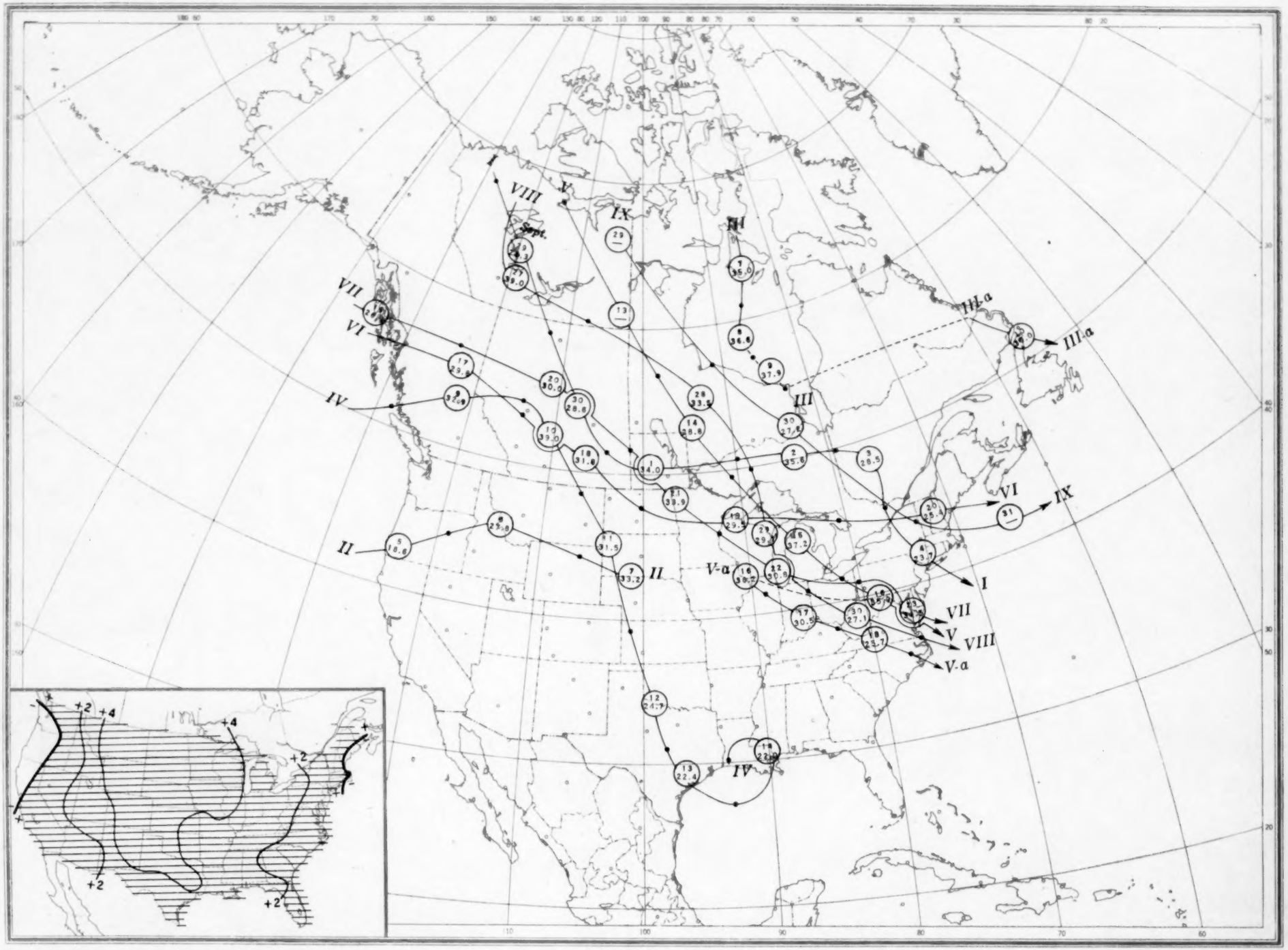

HOURLY PERCENTAGES
100 50 50 100
Shaded portions show excess (+)
Unshaded portions show deficiency (−)
Lines show amount of excess or deficiency

Chart II. Tracks of Centers of Anticyclones, October 1944. (Inset) Departure of Monthly Mean Pressure from Normal

(Plotted by D. R. Harris)



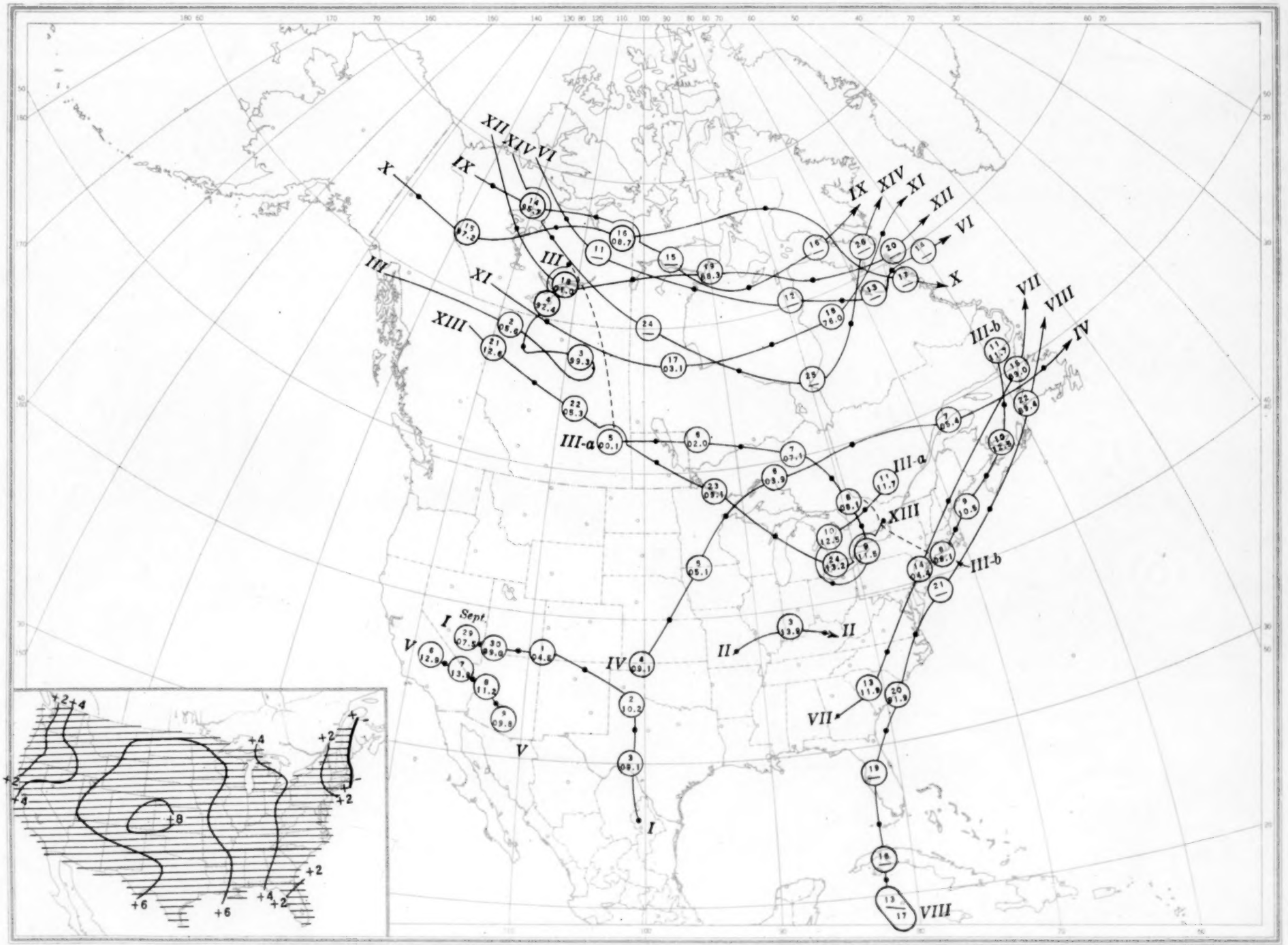
Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, October 1944. (Inset) Change in Mean Pressure from Preceding Month

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, October 1944. (Inset) Change in Mean Pressure from Preceding Month

(Plotted by D. R. Harris)



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, October 1944

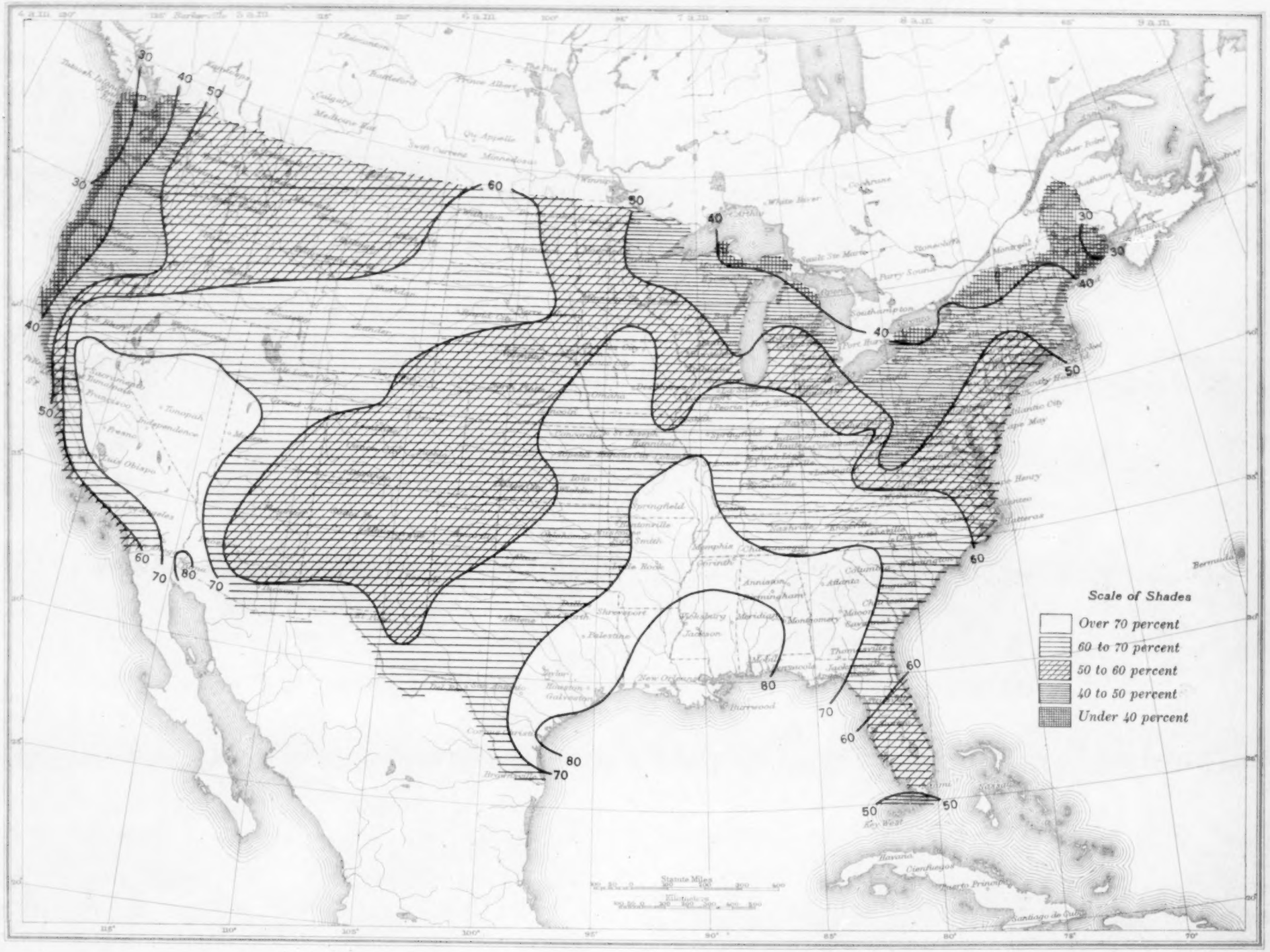


Chart V. Total Precipitation, Inches, October 1944. (Inset) Departure of Precipitation from Normal

Chart V. Total Precipitation, Inches, October 1944. (Inset) Departure of Precipitation from Normal

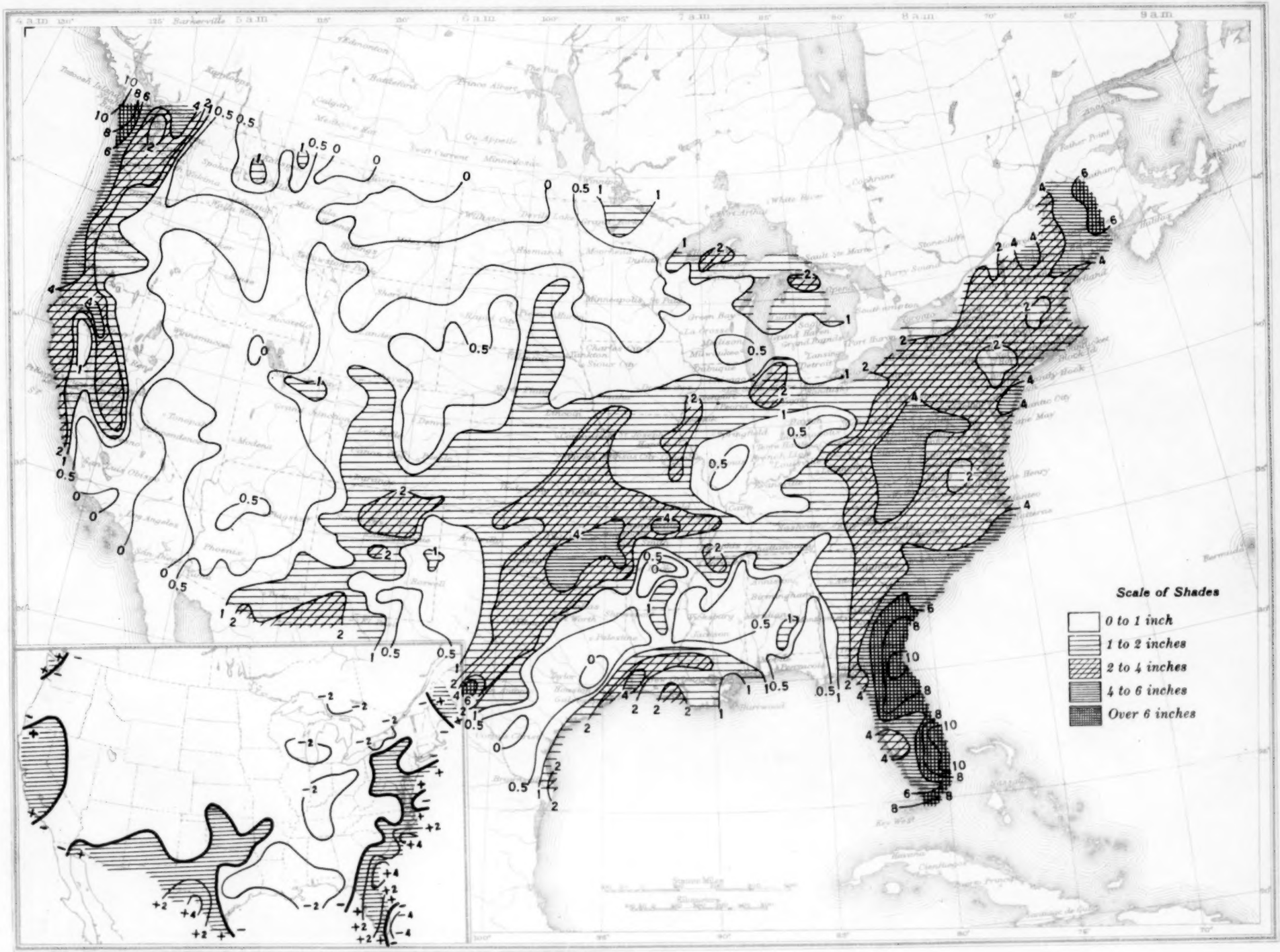


Chart VI. Isobars (mb), at Sea Level and Isotherms °F at Surface; Prevailing Winds, October 1944

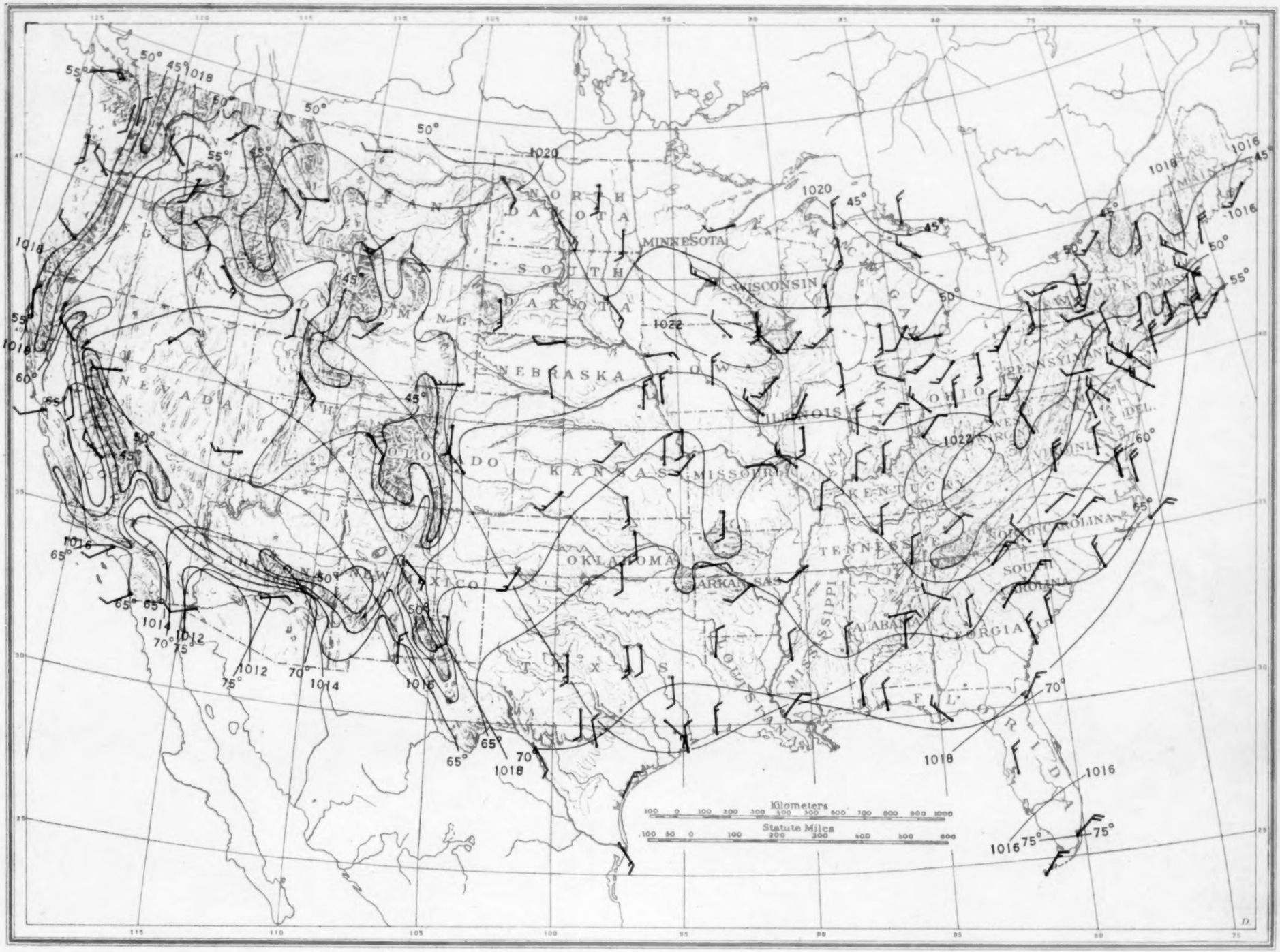


Chart VIII. Isobars (mb) for 1,524 Meters (5,000 ft.) and Isotherms (°C.) and Resultant Winds for 1,500 Meters (m. s. l.) October 1944

Chart VIII. Isobars (mb) for 1,524 Meters (5,000 ft.), and Isotherms (°C.), and Resultant Winds for 1,500 Meters (m s. l.) October 1944

Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 a. m. (E. S. T.).

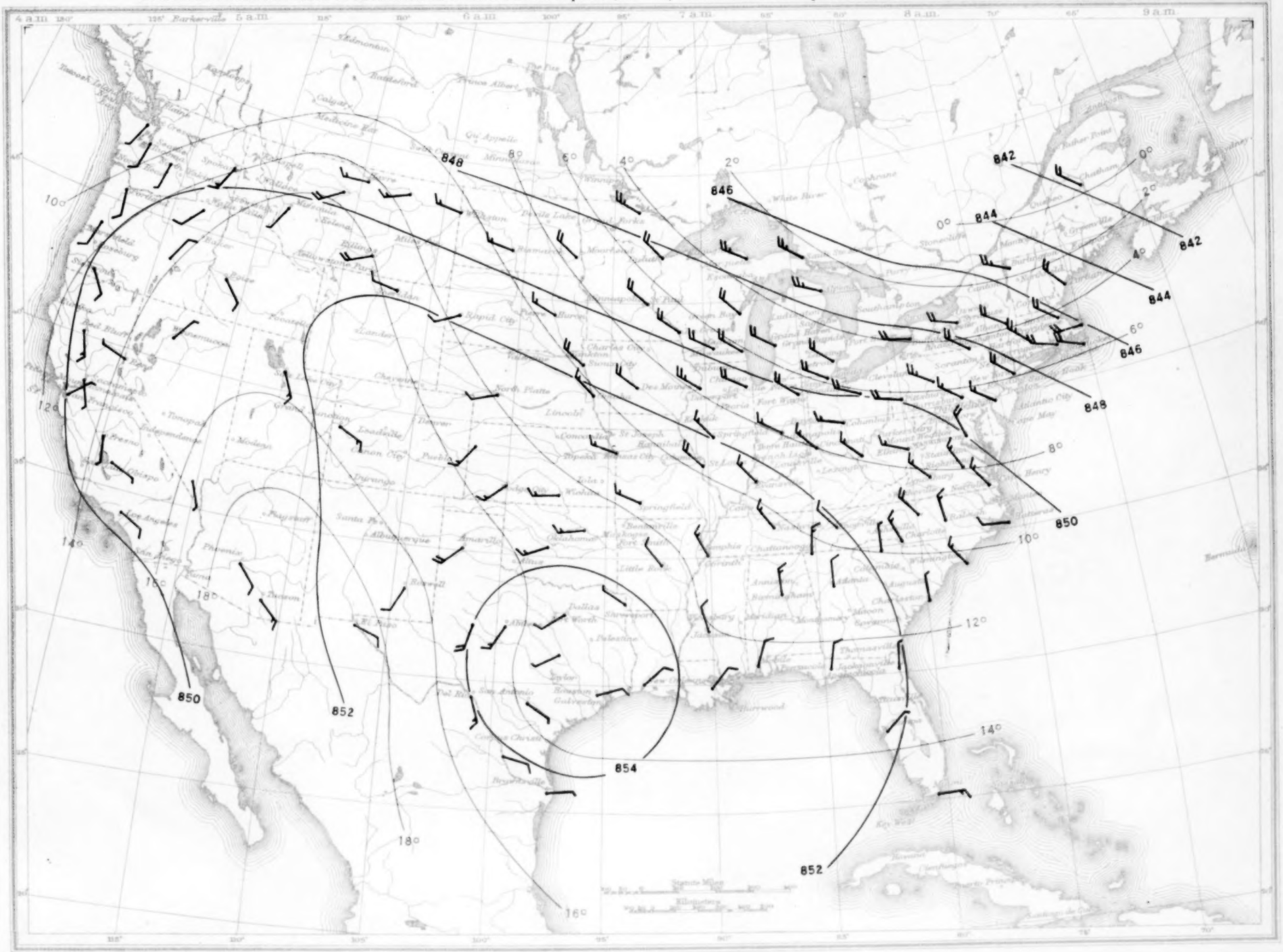


Chart IX. Isobars (mb), Isotherms (°C.), and Resultant Winds for 3,000 Meters (m. s. l.) October 1944

Isobars and isotherms based on radiosonde observations 11:00 p. m. at (E. S. T.) and winds based on pilot-balloon observations at 5:00 a. m. (E. S. T.).

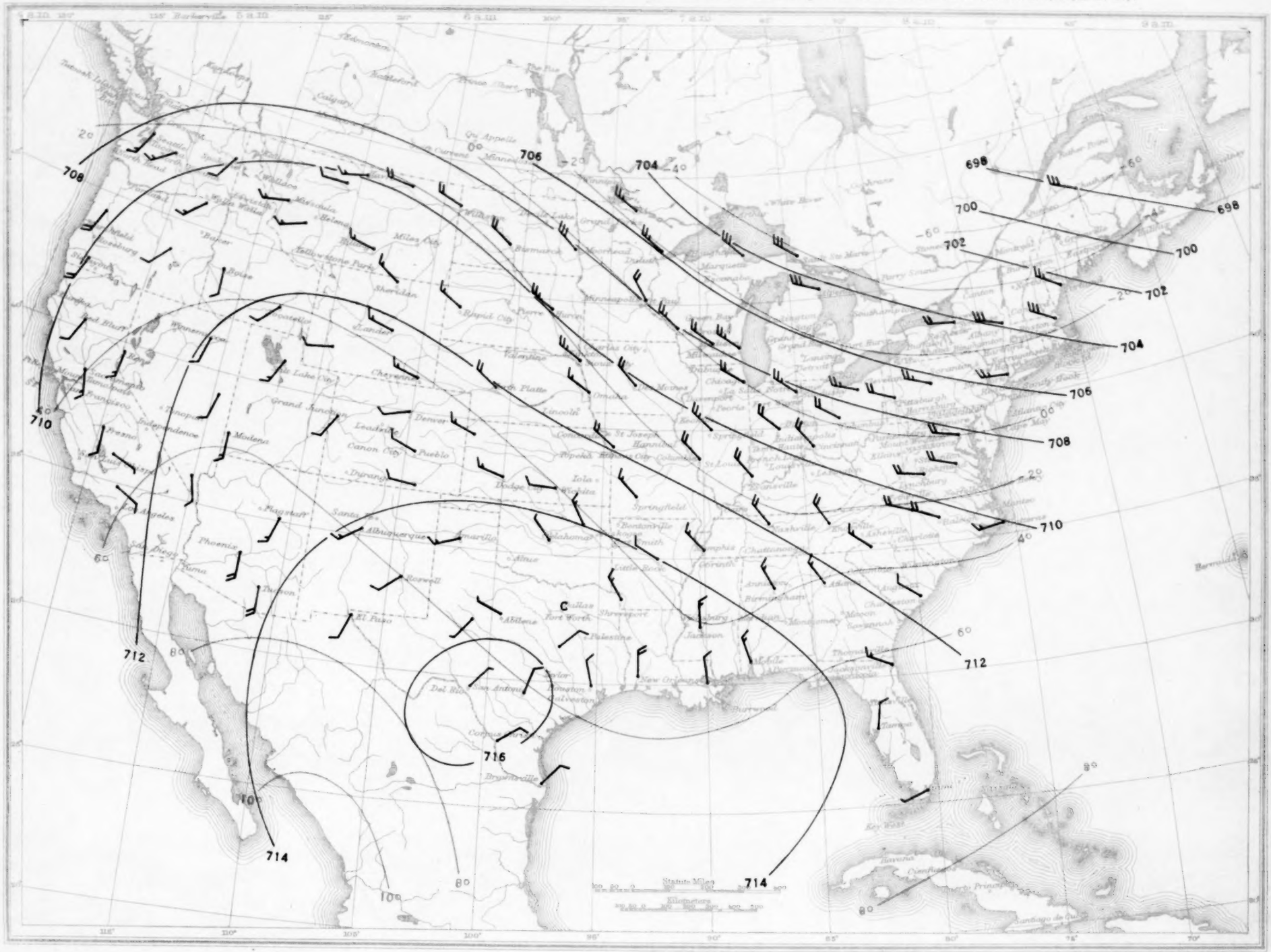


Chart X. Isobars (mb), Isotherms (°C.), and Resultant Winds for 5,000 Meters (m. s. l.) October 1944

Chart X. Isobars (mb), Isotherms (°C.), and Resultant Winds for 5,000 Meters (m. s. l.) October 1944

Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

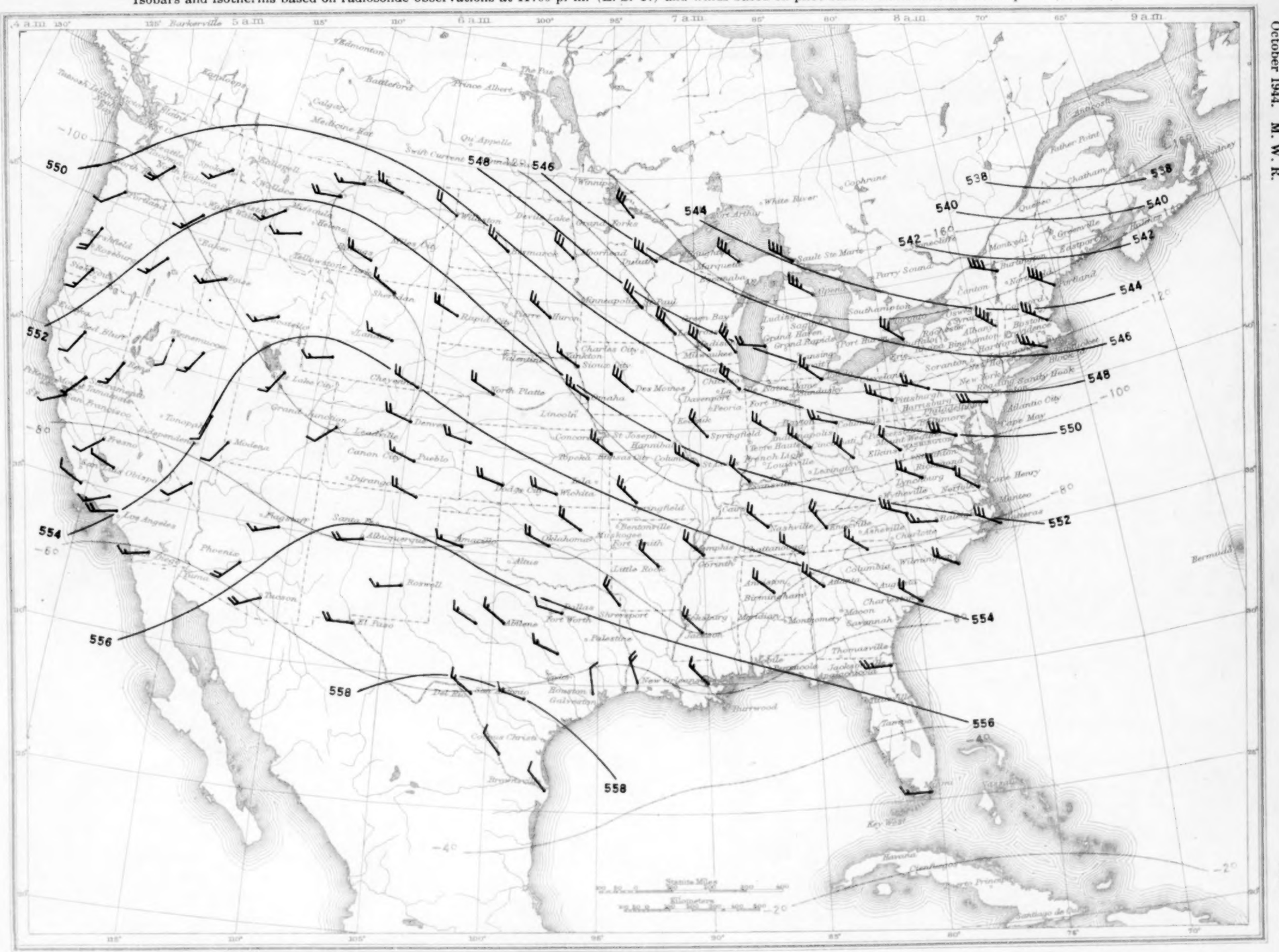
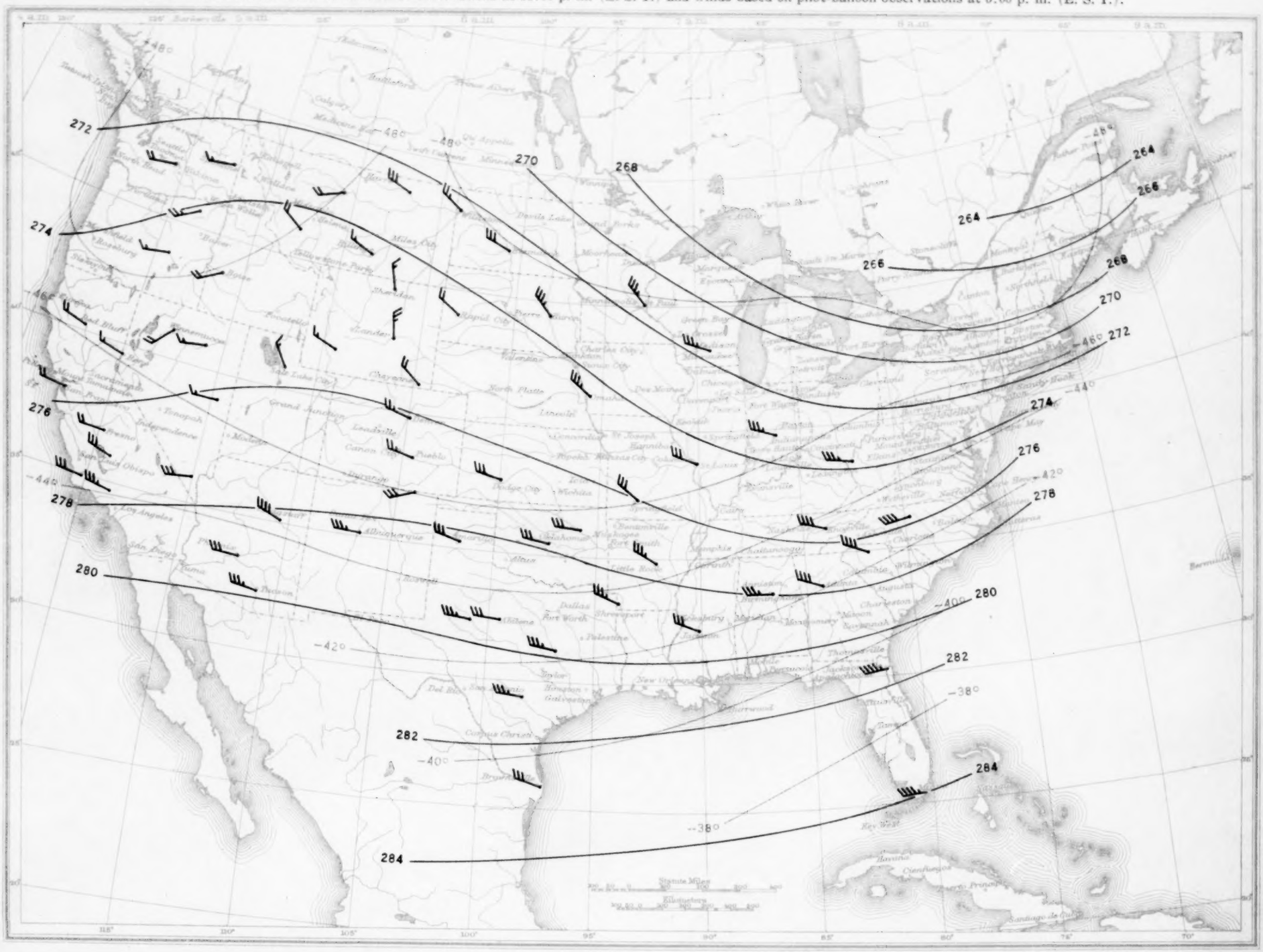


Chart XI. Isobars (mb), Isotherms (°C.), and Resultant Winds for 10,000 Meters (m. s. l.) October 1944

Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).